Saskatchewan
Ministry of
Environment

Report on Saskatchewan's Provincial Forests

December 2008

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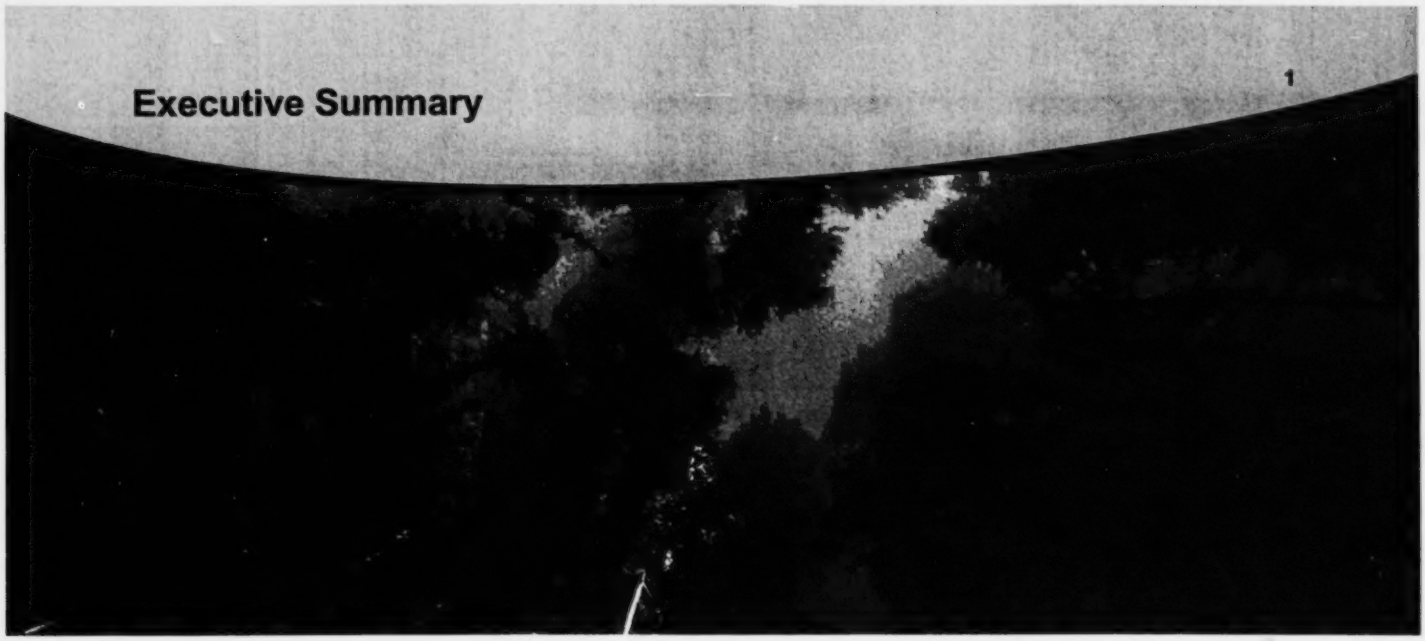

The boreal forest dominates the northern half of Saskatchewan and is an important part of the economy and landscape for residents and visitors alike. Ensuring that these forests are managed sustainably is vital to the province's economy and way of life.

Assessing Saskatchewan's progress toward achieving sustainable forest management is challenging. The subject is complex and there are many differing viewpoints about forest management. Despite the challenges, government has committed, in legislation, to report every ten years on the state of Saskatchewan's Provincial Forests; the first full report will be made in 2009.

The Saskatchewan Ministry of Environment began building toward the 2009 *State of the Provincial Forest Report*, with the publication of the first *Report on Saskatchewan's Provincial Forests* in 2007. The first report set the stage, providing an overview of the ecosystems, people, laws and history, and the framework to be used to assess the state of Provincial Forests. This second report builds on the first, providing an evaluation of 11 indicators of sustainable forest management selected from the Canadian Council of Forest Ministers' Criteria and Indicators Framework, based on their relevance to Saskatchewan. In the full report in 2009, the ministry will report on 22 indicators from the framework.

For each indicator, this report provides an assessment of its current condition, the general trend associated with its condition, and an evaluation of the adequacy of the information available to assess the indicator. As well, the report provides information to allow readers to assess for themselves the province's progress toward sustainable forest management.

Assessment summaries for the eleven indicators covered in this report are presented below, and in Figure A. Weaknesses identified in this report will be considered for action in ministry internal strategic planning processes, where it is within the ministry's mandate to do so.

Environmental Indicators Assessment Summary

The Saskatchewan Ministry of Environment Forest Service Branch has assessed four out of the eleven environmental indicators. They are: the Status of Forest Associated Species at Risk; the Status of Genetic Conservation for Native Commercial Tree Species; the Status of Forest Disturbances; and Soil Disturbance Monitoring Trends.

Woodland Caribou is the only forest dependant species among those listed under the federal *Species at Risk Act* as threatened.

Most seed used in reforestation is wild seed and natural regeneration still is the forest industry's dominant reforestation practice.

Fire is the dominant disturbance on the forest landscape. With a relatively new forest fire management strategy, fire protection resources can be directed where they are needed the most, while allowing fire to play its natural role when feasible.

Monitoring of soil bulk density and surface soil disturbance on harvested and silviculturally treated areas has shown that forest management activities had no significant impact on the compaction of the soil types sampled.

Despite some concerns, environmental sustainability of Saskatchewan's Provincial Forest, based on this partial assessment by the ministry, received a positive overall rating (fair or good indicator states).

Economic Indicators Assessment Summary

In this partial assessment report, the Saskatchewan Ministry of Environment Forest Service Branch has assessed four out of five economic indicators. They are: Contribution of Timber Products to the Gross Domestic Product; Forest Industry Sector Employment Trends; Licence Allocation; and Annual Harvest of Timber Relative to the Sustainable Harvest Level.

Historically, the forest industry sector has been a significant goods-producing industry in the province. However, many factors have depressed the industry in the short term (eg. collapse of housing market in the US, strong Canadian dollar, and reduced demand for pulp).

The forest sector is an important employment generator for forest dependent communities in northern Saskatchewan. However, the current downturn in the forest industry has resulted in job losses for many communities.

Almost 60 per cent of the province's Commercial Forest Zone is in long-term licence arrangements with forest management plans in place. Generally, this provides greater security of supply, resulting in greater economic certainty.

The integrity of Saskatchewan's forest ecosystems is not threatened by over-harvesting; in fact, economic benefits from timber processing are far below their potential.

Considering the short-term concerns about the forest industry sector in Saskatchewan, the economic sustainability of Saskatchewan's Provincial Forest, based on this partial assessment by the ministry, received an overall trend rating that was 'uncertain', however, there are great potential economic benefits not being realized.

Social Indicators Assessment Summary

In this partial assessment report, the Saskatchewan Ministry of Environment Forest Service Branch has assessed three of six social indicators. They are: Aboriginal Forestry Partnerships; Traditional Land Use Knowledge; and Rate of Compliance with Forest Management Laws and Regulations.

In Saskatchewan, there has been good progress in pursuing aboriginal forestry partnerships (e.g. Mistik FMA, Mee Toos Forest Products TSL etc.). These partnerships also help ensure that traditional knowledge is included in planning for sustainable forest management.

There are good checks and balances in place to ensure that effective and informed forest management decisions are made.

Despite the challenges forest management planning processes face, the social sustainability of Saskatchewan's Provincial Forests, based on this partial assessment by the ministry, received an overall positive rating (fair or good indicator states).

Conclusion

Since the proclamation of The Forest Resources Management Act in 1999, Saskatchewan has made considerable efforts to ensure that sustainable forest management is achieved within the Crown Provincial Forest. Based on this partial assessment of 11 sustainable forest management indicators, overall, the progress toward sustainable forest management in Saskatchewan is positive.

Figure A: Summary of Saskatchewan Environment Forest Service Assessment of Indicators

Environmental Indicators		State	Trend	Information
#3	The Status of Forest Associated Species at Risk	Fair	Uncertain	Partial
#5	The Status of Genetic Conservation for Native Commercial Tree Species	Good	No Change	Partial
#7	The Status of Forest Area Disturbed by Fire, Forest Pests and Timber Harvesting	Good	Uncertain	Partial
#9	Soil Disturbance Monitoring Trends	Fair	Improving	Adequate
Economic Indicators		**State**	**Trend**	**Information**
#12	Contribution of Timber Products to the Gross Domestic Product	Poor	Uncertain	Adequate
#14	Forest Industry Sector Employment Trends	Poor	Uncertain	Partial
#15	Maximizing the Distribution of Benefits by Licence Allocation	Fair	Uncertain	Adequate
#16	Annual Harvest of Timber Relative to the Sustainable Harvest Level	Fair	Uncertain	Partial
Social Indicators		**State**	**Trend**	**Information**
#18	Trends in Aboriginal Forestry Partnership	Fair	Improving	Adequate
#19	Aboriginal Traditional Land Use Knowledge	Fair	Improving	Partial
#21	Rate of Compliance with Forest Management Laws and Regulation	Good	Improving	Adequate

About this Report

Purpose

This report is a partial report, leading up to a full report on the state of Saskatchewan's Provincial Forest that will be prepared by the Ministry of Environment's Forest Service Branch, and submitted to the Minister of Environment in 2009. Reporting on the state of the Provincial Forest is a requirement set out in The Forest Resources Management Act section 9(1); the Act came into force in 1999.

The first report on Saskatchewan's Provincial Forests, published in 2007, introduced how the state of the Provincial Forest will be described and provided an overview of the ecosystems, people, laws, history and activities that collectively affect the state of Saskatchewan's public forests. This second report provides a partial assessment of progress towards achieving sustainable forest management. This report is presented in a way that allows readers to assess progress for themselves and to provide feedback based on their assessment, as well as suggestions to improve future reports.

Content

This report is organized into four parts.

Part I is an introduction to the way in which the condition of Provincial Forest will be described and assessed. It provides a framework of criteria, values and indicators, which collectively give a picture of how closely the current condition of public forests match the values that Saskatchewan people want and need from their forests. It provides an assessment of 11 of the 22 indicators chosen to describe the condition of Saskatchewan's Provincial Forests. Of these eleven indicators, four measure environmental trends, four measure economic trends, and three relate to social aspects of forestry.

Part II Part II provides information on a variety of forest activities. Statistics on forest management activities such as the area of forest harvested, burned or reforested provide a picture of the extent and scope of natural and human activity shaping the condition of the designated public Provincial Forest. The information reported dates back to 1999, the year The Forest Resources Management Act was proclaimed, and the beginning of the decade for reporting on the state of the Provincial Forest.

[redacted] references the publications and literature cited and includes a glossary of definitions and acronyms used in the report.

Part IV provides contact information and a feedback form. Readers are encouraged to comment on the information presented and make recommendations for improving future reports.

Future reports

In late 2009, all 22 indicators will be assessed in a full State of the Provincial Forest Report that the Minister of Environment will table in the Legislative Assembly, in accordance with section 9(2) of The Forest Resources Management Act.

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Part I Sustainable Forests: Assessing Our Progress

Forests are essential to the long-term well-being of Saskatchewan's communities, economy and environment. Over half of Saskatchewan is forested, providing people with a multitude of benefits. As stewards of this resource, the Saskatchewan government is committed to the sustainable management of the province's forest resources. This means that the government will balance the use of the forests for various economic, social and cultural purposes with the need to protect the long-term health of forest ecosystems.

In order to report on and assess progress towards achieving sustainable forest management, the province has adopted the Canadian Council of Forest Ministers (CCFM) framework of criteria and indicators. The CCFM framework was developed after extensive consultation with all types of stakeholders, across the country. It offers a good starting point for the selection of sustainability indicators relevant to Saskatchewan.

The CCFM framework is based on six criteria that describe the forest values that Canadians want to enhance and sustain. They are:

1. **Biological Diversity** - The variability among living organisms and the ecosystems of which they are part;
2. **Ecosystem Condition and Productivity** - The stability, resilience and rates of biological production in forest ecosystems;
3. **Soil and Water** - The quantity and quality of soil and water;
4. **Role in Global Ecological Cycles** - The impact of the forest and forest activities on global ecosystem functions;
5. **Economic and Social Benefits** - Sustaining the flow of benefits from forests for current and future generations; and
6. **Society Responsibility** - Fair and effective resource management choices.

The purpose of indicators is to measure or describe forest features that will provide an assessment of how well the desired values are being sustained. Table 1 sets out 22 indicators, which will be the basis for reporting on Saskatchewan's state of the Provincial Forest. These indicators have been selected from the 46 indicators of the CCFM framework and from other sources, such as the Saskatchewan Forest Management Effects Monitoring Program and from the provincial Forest Management Planning Manual, because they are relevant to Saskatchewan, are measurable, and data is available for reporting.

Table 1 highlights the eleven indicators assessed in this report. In 2009, the ministry will assess and report on all 22 indicators. In addition to the criteria and indicators, the provincial framework describes the forest values of interest and the general management objective to be achieved for the value. Together, the criteria and indicators characterize the key components of sustainable forest management and provide a basis for assessing progress toward this goal.

For each indicator, the state, trend and adequacy of information is analyzed as follows:

- **State** – Do conditions identified by the indicator suggest good, fair or poor progress towards sustainable forest management?
- **Trend** – Can the state or condition of the indicator be characterized as improving, no change, uncertain, or deteriorating?
- **Adequacy of Information** – Can the information available to assess the indicator be assessed as adequate, inadequate or partial?

The symbols to be used to summarize the assessment are shown in the figure below.

Figure B: Indicator Assessment Symbols

State	Good	Fair	Poor
Trend	Improving	No Change or Uncertain	Deteriorating
Information	Adequate	Partial	Inadequate

Table 1: Framework of Sustainable Forest Management Criterion and Indicators

1. Biological Diversity The variability among living organisms and the ecosystems of which they are part.	**Element 1.1** Ecosystem Diversity **Value:** Natural range of variation **Objective:** Conservation of the biological diversity of Saskatchewan's forests	**Indicator 1:** Area of Forest, by Type and Age Class, and Wetlands in each Ecozone (CCFM 1.1.1) **Indicator 2:** Area of Forest, by Type and Age Class, Wetlands in Protected Areas in each Ecozone (CCFM 1.1.2)
	Element 1.2 Species Diversity **Value:** Quantity and quality of forest habitat **Objective:** Maintain habitat for identified forest dwelling species	**Indicator 3:** The Status of Forest Associated Species at Risk (CCFM 1.2.1) **Indicator 4:** Report on Songbird Trends Associated with the Provincial Forest Management Effects Monitoring Program[1] Study
	Element 1.3 Genetic Diversity **Value:** Natural genetic diversity **Objective:** No loss of genetic diversity caused by forest management activities	**Indicator 5:** Report on the Current Status of Genetic Conservation for Native Commercial Tree Species

2. Ecosystem Condition and Productivity The stability, resilience and rates of biological production in forest ecosystems.	**Element 2.1** The stability, resilience and rates of biological production in forest ecosystems **Value:** Natural ecosystem processes **Objective:** Maintain the stability, resilience and rates of biological productions in forest ecosystems	**Indicator 6:** Additions and Deletions of Forest Area, by Type (CCFM 2.2) **Indicator 7:** The Status of Forest Area Disturbed by Fire, Forests Pests and Timber Harvest (CCFM 2.3) **Indicator 8:** Proportion of Timber Harvest Area Successfully Regenerated (CCFM 2.5)
3. Soil and Water The quantity and quality of soil and water.	**Element 3.1** Soil Disturbance **Value:** No loss of quantity and quality of soil **Objective:** Maintain and/or enhance the quantity and quality of soil	**Indicator 9:** Report on the Soil Disturbance Monitoring Trends Associated with the Provincial Forest Management Effects Monitoring Program[1]
	Element 3.2 Water Quality **Value:** No loss of quantity and quality of water **Objective:** Maintain and/or enhance the quantity and quality of water	**Indicator 10:** Report on the Aquatic Habitat Change Study Trends Associated with the Provincial Forest Management Effects Monitoring Program[1]
4. Role in Global Ecological Cycles The impact of the forest and forest activities on global ecosystem functions.	**Element 4.1** Carbon Cycle **Value:** Productive land base **Objective:** Mitigate the impact of the forest and forest activities on the productive land base	**Indicator 11:** Net Change in Forest Ecosystem Carbon (CCFM 4.1.1)
5. Economic and Social Benefits Sustaining the flow of benefits from forests for current and future generations.	**Element 5.1** Economic Benefits **Value:** Sustainable economic benefits over the long term **Objective:** Maximize the economic benefits derived from the forest without compromising the integrity of the forest ecosystem	**Indicator 12:** Contribution of Timber Products to the Gross Domestic product (CCFM 5.1.1) **Indicator 13:** Contribution of Non-Timber Forest Products and Forest-Based Services to the Gross Domestic Product (CCFM 5.1.4) **Indicator 14:** Forest Industry Sector Employment Trends (CCFM 5.3.5)

5. Economic and Social Benefits Sustaining the flow of benefits from forests for current and future generations. *(continued)*	**Element 5.2** Distribution of Benefits **Value:** Fair distribution of benefits **Obective:** Maximize the distribution of benefits derived from the forest without compromising the integrity of the forest ecosystem	**Indicator 15:** Maximizing the Distribution of Benefits by Licence Allocation (CCFM 5.2.1)
	Element 5.3 Sustainability of Benefits **Value:** No loss of benefits **Objective:** Maintain or enhance the sustainability of benefits derived from the forest without compromising the integrity of the forest ecosystem	**Indicator 16:** Annual Harvest of Timber Relative to the Sustainable Harvest Level (CCFM 5.3.1)

6. Society's Responsibility Fair and effective resource management choices.	**Element 6.1** Aboriginal and Treaty Rights **Value:** Respect for aboriginal and treaty rights **Objective:** To ensure aboriginal and treaty rights are respected within the context of planning and implementing forest activies	**Indicator 17:** Extent of Consultation with aboriginal people in Forest Management Planning and in the Development of Policies and Legislation Related to Forest Management (CCFM 6.1.1) **Indicator 18:** Trends in Aboriginal Forestry Partnership
	Element 6.2 Aboriginal Traditional Land Use and Forest-Based Ecological Knowledge **Value:** Protection of aboriginal traditional land use and forest based ecological knowledge **Objective:** To incorporate aboriginal traditional land use and knowledge in planning	**Indicator 19:** Aboriginal Traditional Land Use Knowledge (CCFM 6.2.1)
	Element 6.3 Forest Community Well-Being and Resilience **Value:** Sustainable forest communities **Objective:** To ensure local communities are involved in the forest management activities	See 5.1 Element Indicators

6. *(continued)* **Society's Responsibility** Fair and effective resource management choices.	**Element 6.4** Fair and Effective Decision-Making **Value:** Involvement of stakeholders in forest planning **Objective:** Maximize the involvement of stakeholders in forest planning	**Indicator 20:** Proportion of Participants who are Satisfied with Public Involvement Processes in Forest Management in Saskatchewan (CCFM 6.4.1)
	Element 6.5 Informed Decision Making **Value:** Information about and for forest management should be publicly available **Objective:** Ensure that the available information for forest management is current and available	**Indicator 21:** Rate of Compliance with Forest Management Laws and Regulations (CCFM 6.4.2) **Indicator 22:** Investment in forest research, timber products industry research and development and education (CCFM 6.5.3)

This framework is considered draft since Ministry of Environment staff or public feedback may suggest amendments to the indicator set before the publication of the State of the Provincial Forest Report.

*The indicators with a green arrow beside them have been assessed and reported in this report; assessments of all 22 indicators will be reported in the publication of the State of the Provincial Forest Report.

[1] In the event the Forest Management Effects Monitoring Program is discontinued or major change to the program that affects data collection an alternative indicator will be reported on in the State of the Provincial Forest Report.

#1	Area of Forest, by Type and Age Class, and Wetlands in each Ecozone
#2	Area of Forest, by Type and Age Class, and Wetlands in Protected Areas in each Ecozone
#3	The Status of Forest Associated Species at Risk
#4	Report on Songbird Trends
#5	The Status of Genetic Conservation for Native Commercial Tree Species
#6	Additions and Deletions of Forest Area, by Type
#7	The Status of Forest Area Disturbed by Fire, Forest Pests and Timber Harvesting
#8	Proportion of Timber Harvest Area Successfully Regenerated
#9	Soil Disturbance Monitoring Trends

Indicator # 3 The Status of Forest Associated Species at Risk

CCFM Element:
Ecosystem Diversity

Provincial Value:
Natural Range of Variation

Provincial Objective:
Conservation of the Biological Diversity within Saskatchewan's Commercial Forests

Introduction

The forest industry in Saskatchewan modifies forest ecosystems through the construction of roads and the harvest of trees. These activities may cause alteration or loss of habitat for native species. In order to maintain biodiversity, it is necessary to ensure that forest management activities do not threaten the existence of species.

In Saskatchewan, The Wildlife Act, The Wild Species at Risk Regulations and the federal Species at Risk Act (SARA) provide the mechanisms for protecting species at risk. The intent of the legislation is to prevent native species from becoming extirpated or extinct, to provide for the recovery of extirpated, endangered or threatened species, and to encourage the management of other species to prevent them from becoming threatened or endangered. Following are definitions used to describe species at risk:

Extinct: a native wildlife species that no longer exists

Extirpated: a native wildlife species that no longer exists in the wild in Saskatchewan, but exists elsewhere in the wild

Endangered: a native wildlife species that is threatened with imminent extirpation or extinction

Threatened: a native wildlife species that is likely to become endangered if the factors leading to its endangerment are not reversed

Special Concern: a wildlife species that may become a threatened or an endangered species because of a combination of biological characteristics and identified threats

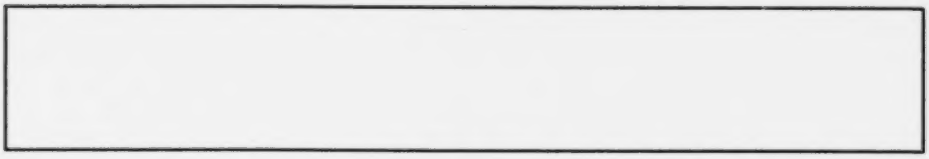


Table 3: Species Proposed by COSEWIC for Listing Under SARA

Common Name	Scientific Name	Occurrence by Forest Area	Comments	Authority	Status
Rusty Blackbird	*Euphagus carolinus*	All	Probable or confirmed breeding	COSEWIC	Special Concern
Common Nighthawk	*Chordeiles minor*	All	Possible or confirmed breeding	COSEWIC	Threatened
Chimney Swift	*Chaetura pelagica*	Weyerhaeuser PP	Probable or confirmed breeding	COSEWIC	Threatened
Olive-sided Flycatcher	*Contopus cooperi*	All	Possible or probably breeding	COSEWIC	Threatened
Wolverine	*Gulo gulo*	All	Listed as occurring in this area by the SKCDC	COSEWIC	Special Concern
Plains Bison	*Bison bison*	Weyerhaeuser PA, Mistik	Listed as occurring in this area by the SKCDC	COSEWIC	Threatened
Lake Sturgeon	*Acipenser fulvescens*	Unknown	Occurs in lakes throughout the provincial forest	COSEWIC	Endangered

Adequacy of Information for Indicator Measure 1:

- This information is current to date.
- COSEWIC meets regularly to assess the status of new species, so changes to the list are possible. The federal minister may list these species under SARA.

Indicator Measure 2:

3-2 Mitigation of negative effects that forest management may have on these species

The Ministry of Environment takes an ecosystem approach to managing for species at risk. This means managing human interactions with ecosystems to maintain or increase the habitats required by species at risk, allowing their numbers to be sustained or potentially increased. As part of this approach, the ministry is developing natural forest pattern standards for forest management. These standards will lead industry towards more closely emulating, to the extent possible, the patterns created by natural disturbances such as fire.

Fire, insect outbreaks and other large scale natural disturbances have shaped the distribution of boreal forest habitat in which wildlife species have evolved. The only feasible way to ensure their collective survival is to continue to provide the range of habitats that in the past were created by natural forces. Specific requirements of the natural patterns standard include: leaving green trees in harvest areas, similar to those left by fires; greater range of sizes of harvest areas; and maintenance of natural proportions of old forest.

Under SARA, all species listed as extirpated, endangered or threatened must have a recovery strategy and action plan. Species listed as special concern require a management plan. The Wildlife Act also allows for the development and implementation of provincial recovery plans for any species at risk.

A national recovery strategy for woodland caribou is nearing completion. The Ministry of Environment is currently completing a provincial recovery framework in co-operation with a multi-stakeholder team. Individual action plans are intended to be developed across the Provincial Forest depending on the threats identified, including forest management activities.

Yellow rail, monarch butterfly and northern leopard frog are species found within commercial forest boundaries but which use open, riparian or aquatic habitats, and so are less likely to be affected by forest management activities. Forest management activities near water systems usually require a no harvest/no equipment buffer to ensure that riparian vegetation is maintained, to reduce the potential for erosion and sedimentation.

Draft management plans for yellow rail and monarch butterfly are currently being developed by Environment Canada. A multi-jurisdictional team is also being assembled to develop a management plan for leopard frog.

Adequacy of Information for Indicator Measure 2:

- There is a considerable amount of information showing a connection between habitat alteration and decline of woodland caribou populations. It is important to complete the woodland caribou recovery framework and begin work on development of action plans to ensure that the ecosystems required by caribou are maintained. It is not known whether the yellow rail, monarch butterfly and northern leopard frog are affected by forest management activities.

Indicator Summary and Forest Service Assessment: Indicator #3 The Status of Forest Associated Species at Risk	
State Fair	The small number of forest dependant species at risk indicates that sustainable forest management is practiced in Saskatchewan. Woodland caribou is the only forest dependant species among those listed as threatened and, as such, is the one most affected by forest management practices. Impacts of resource extraction and recreational activities on woodland caribou require that action be taken to improve the status of this species within the commercial forest. A national recovery strategy is nearing completion, as is the provincial strategy.
Trend Uncertain	There are few species within the commercial forest that have been listed under SARA. The implementation of natural forest pattern standards should act as a preventative measure to reduce the risk of additional species becoming at risk.
Information Partial	There is limited information available on the distribution and population size of SARA-listed species within the Provincial Forest. This is partly due to the cost of collecting information over large remote areas. For the three species of special concern, the risk posed by forest harvesting is perceived to be low due to their use of aquatic, riparian and other non-treed habitats. Therefore, there is little information on the effect of forest activities on these species. For the threatened woodland caribou, work is underway to improve information over at least part of their range in Saskatchewan.

Indicator #5 Report Status of Genetic Conservation for Native Commercial Tree Species

CCFM Element:
Genetic Diversity

Provincial Value:
Natural genetic diversity

Provincial Objective:
No loss of genetic diversity caused by forest management activites

Introduction

Genetic diversity is the genetic variability within a population or species. This variation within a species allows populations to adapt over time to changes in climate and to their local environmental conditions. The conservation of genetic diversity is important for maintaining commercially or culturally important traits of tree species, as well as the fundamental genetic variance required for long-term species survival and evolution. Two measures of genetic diversity will be examined:

- reforestation seed lots
- status of *in situ* and status of *ex situ* conservation efforts for native tree species by ecozone

In situ refers to the genetic diversity found in naturally occurring populations in their original locations. *Ex situ* refers to gene pools resident in industry and government seed banks, in botanic gardens, and in progeny and provenance trials and seed orchards.

The major commercial tree species from the provincial forests include white spruce, black spruce, jack pine, trembling aspen and balsam fir.

Overview of Indicator #5 Assessment		
State ■ Good	**Trend** ●—● No Change	**Information** ○ Partial

Measures:
5-1 Genetic diversity of reforestation seed-lots
5-2 Status of in situ and ex situ conservation efforts for native tree species within each ecozone

Indicator Measure 1

5-1 Genetic diversity of reforestation seed-lots

This indicator is designed to examine the genetic diversity of the seeds being used for forest renewal in the province. Seed-lots used for reforestation are collected from two sources: seed orchards and wild stands. The importance of seed source to the growth and survival of trees is well established; the consensus among forest managers is that the geographic origin of seed-lots must be considered in planting decisions. One of the major reasons for considering maintaining the genetic diversity of seed-lots is to avoid plantation failure when stock is poorly adapted to a site. The vast majority of tree species that are planted in the province are white spruce *(Picea glauca)*, black spruce *(Picea mariana)*, and jack pine *(Pinus banksiana)*.

Each forest management agreement (FMA) area in Saskatchewan has the following standards and guidelines for wild conifer seed supply:

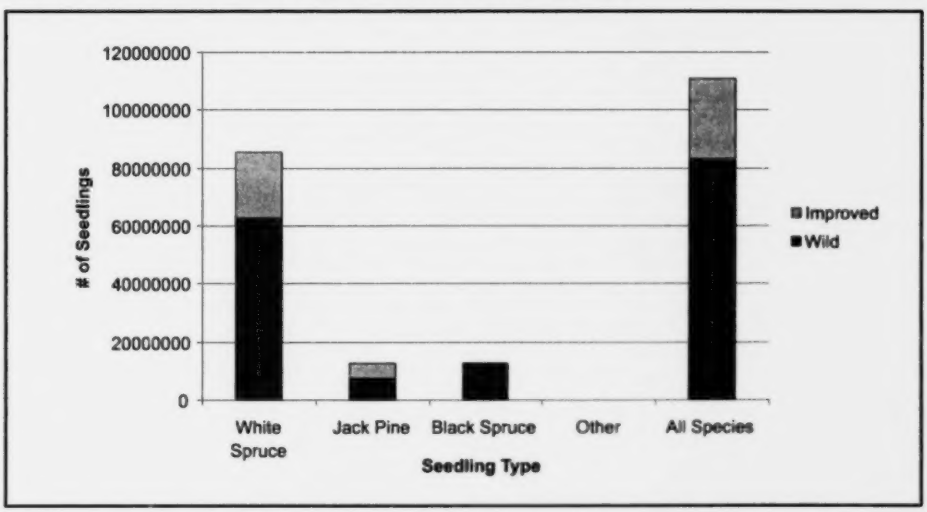
- Tree seed zones within Saskatchewan are to correspond with ecoregion boundaries and all seed and stock used in artificial regeneration are to be acquired within their respective ecoregion.
- FMA licensees must maintain a minimum seed supply of seven years of viable white spruce and five years of both black spruce and jack pine.
- FMA licensees must maintain a database and map indicating the seed source and destination used in annual reforestation efforts. Seed origin is tracked by stand level and seed destination at the harvest block level.
- FMA licensees using seed collected from outside its license area must maintain a database indicating the seed source and destination.
- Seed origin is tracked at the stand level and seed destination at the harvest block level.

The genetic diversity of seed-lots is measured indirectly by the number of trees from which the seeds are collected. Statistical analysis has shown that the minimum number of trees needed for maintaining the genetic diversity of seed-lot collections from wild sources is 30, while that of seed orchards is 18. The difference in numbers between wild and seed orchard minimums reflects the inherent diversity of the seed orchard (trees in the orchard have been selected for genetic diversity). Wild seed collections require that at least 30 individual trees from a single stand of trees have cones removed to make up a single seed-lot.

The Weyerhaeuser Saskatchewan operations on the Prince Albert FMA and, to a lesser extent, the Pasquia Porcupine FMA are the only operations in Saskatchewan that have made use of seed from seed orchards. The tree improvement program for Weyerhaeuser has been under way since 1978 for jack pine and 1982 for white spruce. The program is currently in hiatus, pending decisions about the future of Weyerhaeuser and Domtar's operations in the province.

Between 1999/2000 and 2005/2006, Weyerhaeuser planted 80,297,426 seedlings on both FMAs. Of these, 35 per cent (approximately 23 million seedlings) were grown from seed orchard-sourced seed. Weyerhaeuser has planted both jack pine and white spruce improved seed-lots. Figure 2 shows the number of improved seedlings vs. all seedlings planted by the four FMA licensees since 1999.

Figure 2: FMA Licensee trees planted 1999/2000 to 2005/2006



A possible concern is that the use of improved seed may lead to a loss of genetic diversity in plantations. Weyerhaeuser commissioned a review of the genetic diversity of its seed orchards in 2004. The review found that, while the seed orchard contains all of the common genetic traits found in the wild, some rare traits are missing. This is to be expected, given that any seed orchard cannot capture the full range of genetic diversity of the wild. For jack pine, this is not too great a concern; jack pine frequently regenerates naturally from wild seed sources, even in plantations artificially regenerated from orchard seed. Furthermore, 66 per cent of all jack pine sites are left to regenerate naturally from wild seed sources. White spruce, however, is regenerated almost exclusively from the planting of seedlings. White spruce seed comes from a mixture of wild and orchard sources. Approximately 27 per cent of white spruce seedlings are grown from improved orchard seed. The loss of genetic diversity, as represented by rare traits, would be a concern if improved orchard seed sources were the only seed source for plantation seedlings. This is not the case in Saskatchewan's forest plantations.

Adequacy of Information for Indicator Measure 1:

- Seed-lot genetic diversity represented by the amount of seed and geographical diversity of seed sources is good for Ministry of Environment seeds. All ministry seeds come from wild seed sources.
- Seed-lot genetic diversity represented by the amount of seed and geographical diversity of seed sources is good for FMA licensee seed. The mixture of seed-lots from wild and orchard sources will maintain the provincial genetic diversity of seed-lots.

Indicator Measure 2

5-2 Status of in *situ* and *ex situ* conservation efforts for native tree species within each ecozone

In situ refers to genetic diversity found in naturally occurring populations at their original locations and includes naturally regenerated forest areas.

Using the Prince Albert FMA and Pasquia-Porcupine FMAs as examples, approximately 37 per cent of the area harvested between 1999/2000 to 2005/2006 was planted, while the remaining 63 per cent was left to regenerate naturally. Provincially over the past seven years, the four FMA licensees have planted half of their cut blocks with seedlings (artificially regenerating the cut blocks), while other half are left to regenerate naturally. This mix of artificial regeneration and natural regeneration allows for the maintenance of the original genetic diversity of native tree species on a landscape level.

Ex situ refers to gene pools found in industry or government seed banks, in botanic gardens, and in progeny and provenance trials and seed orchards. Table 4 shows what seed is stored by government and industry in seed banks for future reforestation activities. FMA licensees are required to maintain a seven-year seed supply for white spruce and a five-year supply for jack pine and black spruce. The amount of seed in storage exceeds all requirements for seed collection, in some cases by orders of magnitude.

Table 4: Industry and Government Seed Stocks

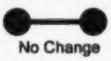
Organization	Tree Species	# of Seed-lots	Approximate number of seeds in storage
Ministry of Environment	White spruce	50	1,551,000,000
	Jack pine	52	400,000,000
	Lodgepole pine	4	710,000
	Black Spruce	1	150,000
Weyerhaeuser Prince Albert	White Spruce	8[a]	143,600,000
	Jack Pine	10[a]	16,500,000
	Black Spruce	18	52,500,000
Weyerhaeuser Pasquia-Porcupine	White Spruce	28	517,800,000
	Jack Pine	14	10,400,000
	Black Spruce	23	71,300,000
Mistik Management Ltd[b]	White Spruce	10	134,892,000
	Jack Pine	11	25,473,000
	Black Spruce	10	1,709,000

a One of the seed sources is the Weyerhaeuser seed orchard, which is composed of a diversity of seed sources.
b L&M FMA licensee currently buys all the seed they require from Mistik's seed inventory.

In addition to the seed stored for reforestation purposes, the Natural Resources Canada (NRCan) Canadian Forest Service holds Saskatchewan tree seed at its national seed bank in Fredericton, New Brunswick. The NRCan collection includes the following tree species (and seed-lots) from Saskatchewan: tamarack (27 seed-lots); white spruce (28 seed-lots); black spruce (14 seed-lots); jack pine (31 seed-lots); and lodgepole pine (1 seed-lot).

Adequacy of Information for Indicator Measure 2:

- Regarding *in situ* conservation of native tree species, the current practice of natural regeneration along with some artificial regeneration on all harvested areas will maintain native tree species on the landscape.
- Existing *ex situ* sources of seed in seed banks are more than sufficient to maintain conservation of native tree species, in terms of both quantity and diversity of seed sources. One note of caution – some of the Ministry of Environment seed collections are old and of low viability, and will need to be removed from the seed bank. However, remaining stock is more than sufficient to meet any conceivable needs of the provincial reforestation program.

Indicator Summary and Forest Service Assessment: Indicator #5 Report on the Status of Genetic Conservation for Native Commercial Tree Species	
State Good	Conservation of genetic diversity of commercial trees is a prerequisite of sustainable forest management. A mixture of improved orchard and wild seed is used in artificial regeneration of harvested areas and natural regeneration still is the dominant reforestation practice by the forest industry. Therefore, the state of genetic conservation of native commercial tree species diversity is considered good.
Trend  No Change	The trend by some major forest industry companies has been to use improved seed for white spruce and jack pine planting stock. As these improved seed sources potentially limit genetic diversity, particularly for rare traits, there is some concern that genetic diversity could be lost. The practice of allowing natural regeneration on stands mitigates any potential loss of genetic diversity from improved orchard seed; thus the overall trend is of no change in genetic diversity in native commercial tree species.
Information Partial	Good information on the genetic diversity of reforestation seed lots exists. There is one study of the *in situ* genetic diversity of one commercial species which indicated that genetic diversity was highest within *in situ* populations. Information must be considered partial as no *in situ* genetic diversity information is available on most species. It is highly probable that the large amount of natural regeneration, which occurs on harvested areas maintains the natural *in situ* genetic diversity. Information on *ex situ* genetic diversity is good

Indicator # 7 The Status of Forest Area Disturbed by Fire, Forest Pests and Timber Harvest

CCFM Element:
The stability, resilience and rates of biological production in forest ecosystems

Provincial Value:
Natural ecosystem processes

Provincial Objective:
Maintain the stability, resilience and rates of biological production in forest ecosystems

Introduction

The sustainable management of our forested ecosystems depends on their ability to maintain ecological functions and processes and to perpetuate themselves over the long term. Relative freedom from stress (stability) and relative ability to recover from disturbance (resilience) within a forest ecosystem combine to provide an indication of ecosystem condition. Major biotic and abiotic stresses like fire, insects, disease and timber harvesting provide an indication of disturbance and stress (stability). Resilience is not discussed in this assessment.

Fire dominates the landscape in the boreal forest. The area disturbanced by fire each year is usually much greater than the total area harvested annually. Spruce budworm has been the major insect pest to disturb and damage forests within the boreal forest of Saskatchewan.

Overview of Indicator #7 Assessment

State	Trend	Information
Good	Uncertain	Partial

Measures:

7-1 Annual area burned in the Commercial Forest Zone is less than the 10-year average
7-2 Annual area disturbed by forest pests
7-3 Annual harvest area

Indicator Measure 1

7-1 Area burned in the Commercial Forest Zone is less than the 10-year average

The area burned is variable from one year to the next and is significantly affected by climatic factors. The right weather conditions for fire will lead to extensive forested and non-forested areas being burned. Precipitation in the autumn, adequate snowfall and spring rains will significantly reduce wildfire caused by lightning and limit the spread of fires caused by humans. Normal rainfall during the summer reduces, but does not eliminate the potential for fire. The threat of large fires is managed through the efforts of the Ministry of Environment's Fire Management and Forest Protection Branch.

All fires that start in the full response zone are immediately fought. Fires in the modified response zone are considered for initial attack and sustained action based on assessment of values and financial cost. Fires that occur in the observation zone are assessed for values at risk with intent to allow for fires to burn for ecological processes. Table 5 shows the impact of fire by response zone, while Table 6 shows the extent of fire within the Provincial Forest, by forest area.

Table 5: Fire Disturbance - Total Area Burned by Response Zone										
	1999	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**10 Year Average**
Full Response Zone	67,441	5,245	32,098	698,501	77,821	847	28,327	134,087	1,204	144,356
Modified and Observation Response Zone	106,278	135,564	151,331	181,108	48,768	257,284	185,446	1,069,641	211,709	291,012
Total Area Burned	173,719	140,809	183,429	879,609	126,589	258,131	213,773	1,203,728	212,913	

Data Source: Fire Management and Forest Protection Branch

In the long term, it may be difficult to stay below the ten-year averages of 144,356 ha in the Full Response Zone and 291,012 ha in the Modified Response and Observation zones for burned areas. The shift in fire strategy beginning in 2004 means that Observation Zone fires will potentially be larger, increasing the 10-year average. Climate change studies conclude that warmer temperatures will significantly change the boreal forest by shifting the climatic zone suitable to boreal species northward. Scientists are predicting an increase in frequency and severity of forest fires by as much as 40 to 50 per cent, primarily due to warmer temperatures and reduced precipitation. (Source: Saskatchewan Environmental Society: Climate Change and Saskatchewan's Boreal Forest)

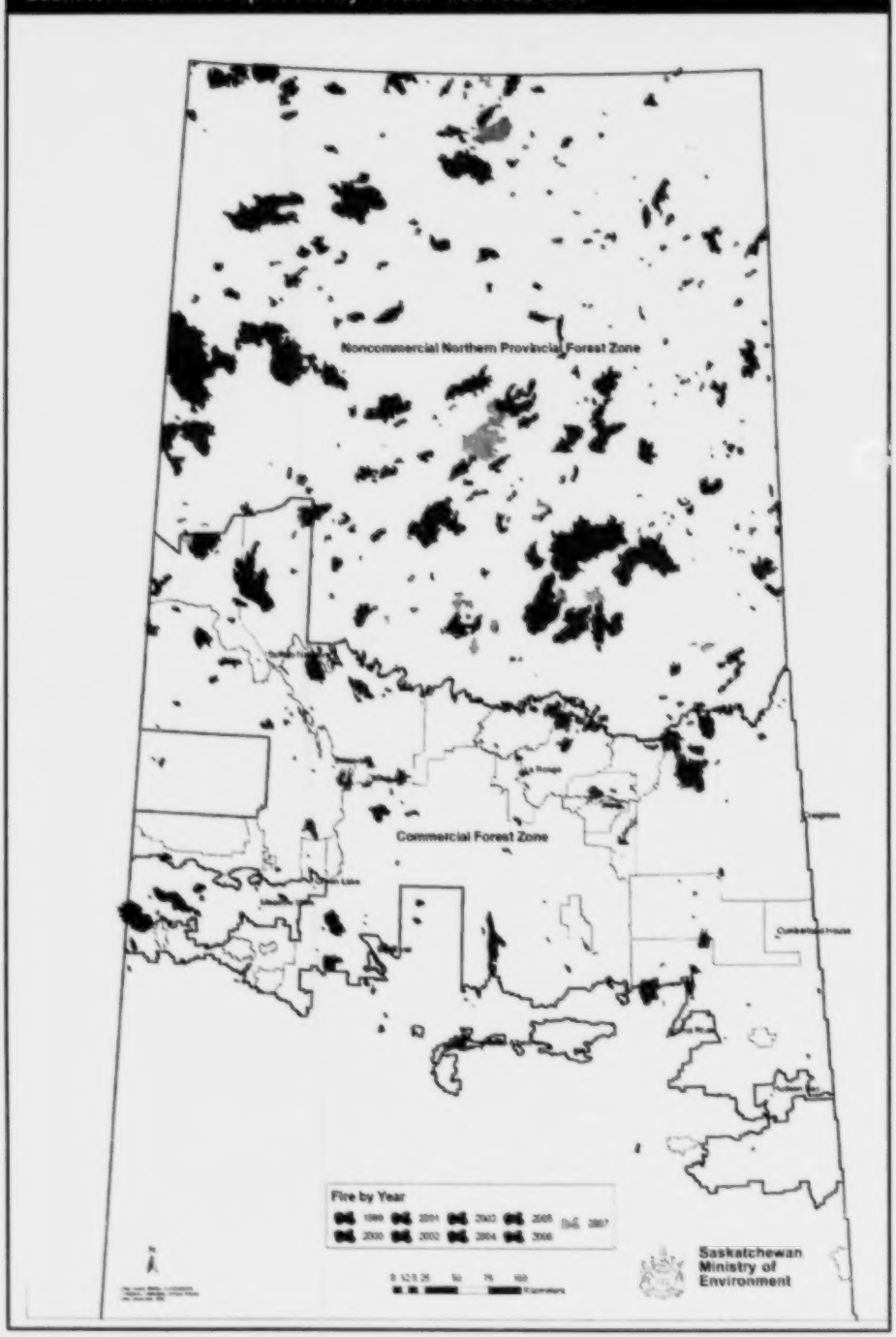
Table 6: Fire Disturbance - Area Burned (<100 ha) by Forest Area (Excludes Parks and Reserves)									
Forest Area	**1999 Area Burned (ha)**	**2000 Area Burned (ha)**	**2001 Area Burned (ha)**	**2002 Area Burned (ha)**	**2003 Area Burned (ha)**	**2004 Area Burned (ha)**	**2005 Area Burned (ha)**	**2006 Area Burned (ha)**	**2007 Area Burned (ha)**
Mistik FMA	12,198	0	0	15,063	9,785	149	0	19,559	0
L&M FMA	0	0	0	0	0	0	0	0	0
Meadow Lake OSB TSL	0	0	0	19,911	1,975	0	3,174	0	0
North West Communities TSL	1,782	0	0	22,430	0	0	0	32,737	0
Kitsaki-Zelensky TSL	459	0	0	2,742	0	0	2,819	8,777	0
Turner East Supply Area	0	0	0	66,713	1,956	572	0	9,266	0
Turner West Supply Area	39,515	0	0	12,544	398	54	0	18	6,643
Weyerhaeuser PA FMA	46,934	0	668	40,166	29,749	5	10,234	14,487	0
Island Forests	0	2,117	0	9,045	0	0	0	0	0
Mee-Toos TSL	17,325	0	561	88,795	0	52	9,279	0	0
Weyerhaeuser PP FMA	56	199	10,019	19,033	14,458	0	0	0	0
Suggi Lowlands Prov. Forest	506	163	0	230	3,365	115	0	0	0
Nemeiben Northern Prov. Forest	0	0	0	498	0	0	0	23,537	0
Total Commercial Forest Zone	**118,775**	**2,479**	**11,248**	**297,170**	**58,321**	**947**	**25,506**	**108,381**	**6,643**
Northern Provincial Forest (non-commercial forest zone)	88,809	79,732	136,402	502,860	50,636	255,660	181,920	855,326	174,406
Total Provincial Forest	**207,584**	**82,211**	**147,650**	**800,030**	**108,957**	**256,607**	**207,426**	**963,707**	**181,049**

Data Source: Ministry of Environment Geomatics Services

Adequacy of Information for Indicator Measure 1

- The fire statistics collected in Table 5 are for all forested lands under the jurisdiction of the government of Saskatchewan, including provincial forests, provincial parks and wildlife development lands burned over and are not divided or reported by productive and non-productive forest stand types.

Saskatchewan Fire Depletions by Forest Area 1999-2007



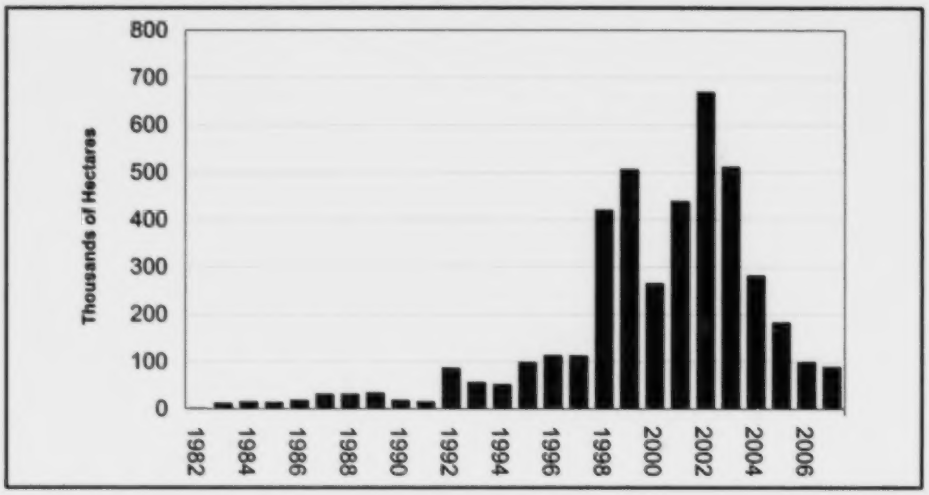
Indicator Measure 2

7-2 Annual area disturbed by forest pests

The biotic environment can also produce additional stress on the forest when epidemic populations of forest insects occur, or conditions are right for the spread of diseases or the cumulative impact of drought and other factors cause the general decline in the health of forest stands.

Table 7 shows the area infested in each operating year by the eastern spruce budworm *(Choristoneura fumiferana)*, which is one of the major insect pests that disturb and damage spruce forests in Saskatchewan. Defoliated areas are mapped each July with aerial surveys and followed by ground surveys. Predictions of defoliation for the following year are determined by sampling overwintering larvae in the autumn. Spruce budworm populations had increased since 1983, reaching epidemic levels in 2002. Currently the budworm population is beginning to decline (Fig 2). Populations of spruce budworm are cyclic and relate to the host species biological and environmental conditions.

Figure 3: Area of moderate to severe defoliation caused by the spruce budworm Choristoneura fumiferana in Saskatchewan 1982-2007



The Saskatchewan Ministry of Environment has been involved in a spruce budworm management program since 1992. Areas are selected for treatment with the objective of keeping economically valuable trees green so that they can be harvested within six to twenty years. Forest managers use a computer model to analyze tree growth, defoliation and population data to help them make the best choices for treatment areas. A significant area of spruce forest – just over 80,000 hectares – was killed by spruce budworm between 1999 and 2006.

Typically in late May and early June, the Ministry of Environment uses aerial spraying to treat spruce budworm-infested forests. The biological pesticide, *Bacillus thuringiensis var. kurstaki* (Btk), is used. Btk, a naturally occurring soil bacterium known to kill certain types of caterpillars, has been safely used around the world for nearly 40 years. It is not harmful to other beneficial insects such as bees, or fish, birds or wildlife and poses no human health hazard. Due to surveys showing a declining area of defoliation and diminishing populations, the ministry did not implement a spray program in 2007-08.

Table 7: Net Area of Moderate to Severe Defoliated Forest Areas & Treated Areas for Spruce Budworm (includes Parks, Reserves etc.)									
	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08
Infested (defoliated) area (ha)	506,749	265,776	438,883	669,591	511,780	282,376	183,511	99,692	89,613
Btk treated area (ha)	20,639	30,260	26,350	42,503	40,277	27,227	30,000	26,337	0

Table 8 shows the trend and extent of other insect and disease disturbances within Saskatchewan's northern forests since 1999. Table 9 shows the general location of these disturbances within the forest areas of the province as per the 2007 aerial survey results.

Table 8: Net Area in Hectares of Other Insect / Disease Disturbances (includes Parks, Reserves etc.) (annual disturbance unless indicated)									
	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08
jack pine budworm	0	0	0	0	0	0	0	0[1]	0
eastern larch beetle[*2]	0	0	0	0	0	2,103	17,158	94,000	97,308
aspen decline[3]	-	-	-	-	-	-	Yes	68,007	40,056
large aspen tortrix	-	-	-	-	-	-	-	-	58,465
forest tent caterpillar	1952	1982	604	131	2203	0	0	0	0
aspen leaf spot disease	-	-	-	-	-	-	-	-	40,786

1 The 1,367 ha jack pine disturbance reported previously has since been confirmed not to be jack pine budworm.
2 Cumulative amount of disturbance
3 Aspen decline was not measured in 2005/2006 but there was some disturbance observed, the 2006/2007 numbers are over and above the existing disturbance noticed in 2005/2006

Despite having not detected outbreaks of jack pine budworm (JPBW) *(Choristoneura pinus pinus)* in the reporting period, the Ministry of Environment will continue to look for the appearance of this pest. JPBW outbreaks typically occur in 15 year cycles. The last significant JPBW defoliation in Saskatchewan was in 1985. Therefore, the return of major outbreak populations is overdue. The most damage occurs during the first two years the population begins to build, so early detection is necessary if control measures are to prevent significant damage.

Eastern larch beetle *(Dendroctonus simplex)* is a species that targets larch trees. Larch beetle is a bark beetle similar to the mountain pine beetle. The insect has killed a cumulative area of up to 97,308 ha in the central and northeast areas of the Commercial Forest Zone. Larch trees are not a commercial species in Saskatchewan, therefore the only means of suppression, sanitation logging of older drought stressed larch stands, is not performed.

Aspen decline is an emerging issue, in general a phenomenon of overall poor health of aspen hardwood forests. This decline takes the form of thinning crowns and dead foliage and tops in numbers sufficient to be detected by aerial surveys. It is not known precisely why this occurs but it is attributed to the cumulative impacts of insect and disease effects, together with the impact of years of drought. The hardwood disturbance agents included in this report are important because of their collective impact, together with that of climate, on the overall health of aspen.

Large aspen tortrix (LAT) *(Choristoneura conflictana)* is a periodic defoliator of hardwood forests. This insect is found together with forest tent caterpillar and in some jurisdictions the effects are not separated. In 2007, aerial surveys detected 41,000 ha of hardwood defoliation in the area around Patuanak. Ground surveys confirmed this damage was caused by LAT.

Forest tent caterpillar (FTC) *(Malacosoma disstria)* is one of the major periodic defoliators of hardwood trees in the boreal forest. There have been no significant areas of defoliation in the provincial forest since 1998. However, between 1999 and 2003, isolated outbreaks of FTC were detected in the Greenwater, Duck Mountain, Lac La Ronge and Good Spirit provincial parks. It is important to monitor periodic disturbances by FTC and other species affecting hardwood, due to the potential for cumulative impacts and their, as yet, unclear role in the phenomenon of aspen decline and long-term climate change impacts.

Leaf spot disease of aspen – (Marssonina populi)
There are a number of foliar diseases of aspen found in the boreal forest. In 2007, approximately 41,000 hectares of hardwood forests showed significant damage attributable to leaf spot diseases – most likely *Marssonina populi*. There has been an increasing occurrence in foliar diseases, likely due to a number of wet summers. This damage is significant to the point that it is now visible in ongoing aerial surveys.

Dutch elm disease (DED) *(Ophiostoma novo-ulmi)*, is a fungus that is spread locally by root transmission and by elm bark beetles; the beetles can be spread more broadly by transport of elm wood. This invasive disease continues to spread though Saskatchewan. Dutch elm disease is not managed in the Provincial Forest and thus has not been monitored to date, although it is known that DED is killing native elms in the Provincial Forest. DED is monitored and managed outside the Provincial Forest in urban areas; however, these impacts are outside the scope of this report.

Dwarf mistletoe *(Arceuthobium americanum)*, is a host-specific parasitic plant and is prominent in jack pine stands within the Island Forests. It also occurs in scattered large pockets throughout the Provincial Forest. Mistletoe infestation was originally measured in 1998 at 205,000 ha. Although the plant does not spread quickly, the level of treatment by harvesting has not been assessed to provide an updated status of disturbance.

Table 9: Area in Hectares of Insect and Disease Infestations by Type and by Forest Area as Detected During the 2007 Aerial Services

Forest Area	Aspen Decline	Aspen Leaf Spot	Eastern Larch Bark Beetle	Large Aspen Tortrix	Spruce Budworm Defoliation (moderate & severe)
Island Forests	7,013	1,355	1,319	0	625
Kitsaki -Zelensky TSL	0	311	0	0	572
L&M FMA	541	815	0	0	0
ML OSB TSL	4,563	5,594	0	0	0
Mistik FMA	542	4,811	67	53,713	0
NWC TSL	0	0	0	3,221	74
Nemeiben	0	0	0	0	117
Turner East	0	0	0	148	0
Turner West	0	0	0	1,379	0
Pasquia Porcupine FMA	24,756	3,205	529	0	18,285
Prince Albert FMA	746	8,471	1,393	0	31,415
Mee-Toos TSL	0	0	0	0	668
Suggi Lowlands	1,753	0	0	0	0
Northern Provincial Forest	0	0	0	0	80
Other Areas Outside the Provincial Forests (Parks, Air Weapons Range etc.)	143	16,224	0	3	37,777
Total	40,057	40,786	3,308	58,464	89,613

Mountain pine beetle (MPB) *(Dendroctonus ponderosae)*, is a species of great concern to Saskatchewan. With major outbreaks and resulting pine forest mortality in British Columbia, this pest has spread into Alberta lodgepole pine forests and, in 2006, into the jackpine-lodgepole pine hybridization zone. The Ministry of Environment is monitoring this pest very closely and has imposed restrictions on the importation, transport and storage of pine forest products with bark attached originating in B.C., Alberta and the U.S.A. The ministry is working together with the federal government and the governments of the other provinces and territories to develop a national forest pest strategy; among its priorities is the prevention of the spread of MPB. In addition, the ministry is working collaboratively with other jurisdictions to develop regional strategies, including science-based risk assessment to help identify stands of greatest susceptibility to the pest, helping to mitigate the impacts if MPB spreads into Saskatchewan.

Adequacy of Information for Indicator Measure 2:
Adequate annual monitoring of major pest threats occurs in the province and is the responsibility of the Ministry of Environment. The information provided for this indicator comes from those ongoing baseline monitoring activities. Ongoing monitoring provides the timely information needed to mount the most cost-effective prevention and control programs. It is important to monitor insect and disease activities during the times when populations are low so that, when gradual increases are detected, appropriate and effective responses can be made. Saskatchewan is collaborating with other provinces and the Canadian government on a national pest control strategy which depends on this kind of information.

Indicator Measure 3

7-3 Annual Harvest Area

Figure 4 shows the area harvested between the operating years 1999/2000 and 2006/2007. The significant drop to 15,000 hectares in 2006/2007 from the longer-term average of 25,000 ha per year is due to the closure of a pulp mill and two sawmills in that year. On average, 0.25 percent of the total area of forest land considered capable of commercial timber production is harvested each year, within an area generally extending from the southern edge of the Provincial Forest north to the Churchill River.

Figure 4: Actual Harvest for the Provincial Forest Commercial Forest Zone

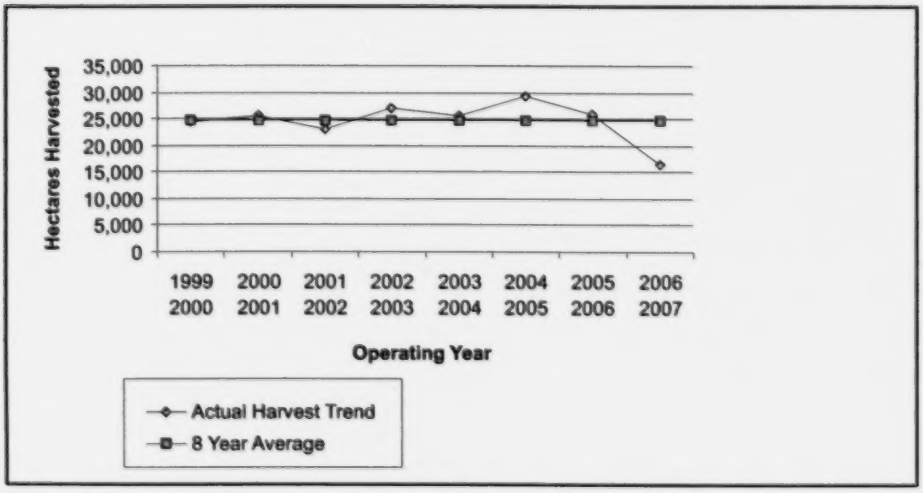
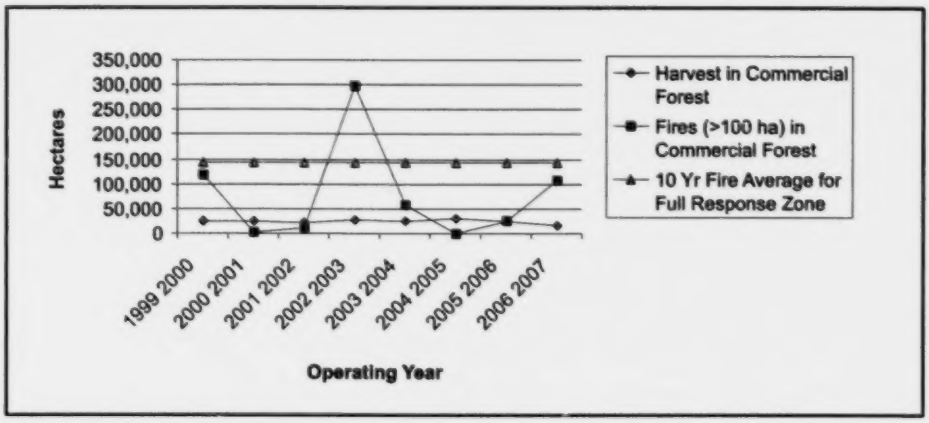


Figure 5 compares area harvested to forest area burned for the period 1999/2000 to 2006/2007. Area burned in the commercial forest in any given year is highly variable; in 2004, 950 hectares burned while in 2002, 297,000 hectares burned. In the full response fire zone, the ten-year average is 144,462 hectares and the 20-year average is 140,388 hectares. In the Commercial Forest Zone, the area burned exceeds the area harvested by at least five times in an average year. Area burned calculations are based on the perimeter of the fire burned area and not all trees are burned within this area.

Figure 5: Harvest & Fire Disturbance Comparison

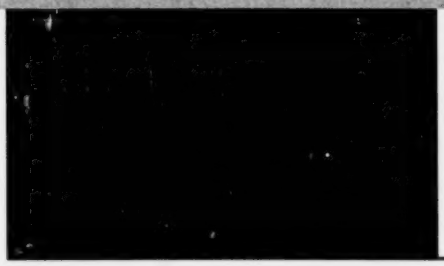


Adequacy of Information for Indicator Measure 3:

- The information available for area harvested is very good. Approximately 97 per cent of the harvest area is mapped by industry and periodically verified by the ministry. The remainder of the harvest area is estimated by converting reported harvest volumes to area using an assumed average harvest volume per hectare (165 cubic metres per hectares). All harvest areas are eventually photographed to update the forest inventory.

Indicator Summary and Forest Service Assessment: Indicator #7 The Status of Forest Area Disturbed by Fire, Forest Pests and Timber Harvesting	
State Good	The stress on forest ecosystems caused by fire and insects and diseases are within the range of what can be considered normal natural forces. Such disturbances have always been a part of boreal forest life and forest species have evolved to depend on or cope with the changes caused by such disturbances. Fire is one of the primary ways the boreal forest renews itself. Saskatchewan's Provincial Forest continues to renew itself after fires and infestations. The area of forest being harvested is well within sustainable limits. The success in regenerating harvested areas will be one of the focuses of a future report. In general forests regenerate well after harvest. One remaining challenge is ensuring that the new forests have the desired proportion of spruce.
Trend Uncertain	Although the forest continues to regenerate from fire, insects and harvesting the uncertainty posed by a changing climate causes the assessment of trend in this indicator to be uncertain. For example the large expansion of mountain pine beetle has been linked to warmer winters. Climate models predict a greater risk of fire due to changes in moisture and temperature. In the coming decades, the most significant stress upon forests may well be a changing climate that will redefine the types of forest that can thrive in Saskatchewan.
Information Partial	The Province does have adequate information collected for fire, pest and harvesting disturbance. Overall ecosystem condition cannot be assessed fully unless the aspect of recovery from disturbance is explored. This aspect of ecosystem condition will be assessed and reported on in the *2009 State of the Provincial Forest* report under Indicator #6 - Additions and Deletions of Forest Area by Type and Indicator #8 -Proportion of Timber Harvest Area Successfully Regenerated.

Indicator # 9 Soil Disturbance Monitoring Trends Associated with the Provincial Forest Management Effects Monitoring Program



CCFM Criterion:
Soil and Water

Provincial Value:
No loss of quantity and quality of soil

Provincial Objective:
Maintain and or enhance the quantity and quality of soil

Introduction

The impact of forest harvesting and renewal upon soil is measured as part of the Forest Management Effects Monitoring Program. This monitoring program, a partnership between Forest Service and major forest industries, compares the soil condition on forest sites that have been harvested and renewed to similar sites that have not been harvested. Where differences detrimental to the health of the forest are found, the program is intended to provide the knowledge necessary to devise new practices that maintain the productivity of the soil.

Changes in soil properties, such compaction and soil disturbance, caused by forest management activities are a concern for ecosystem health. Increases in soil bulk density, a measure of compaction, can reduce tree root growth and, ultimately, the growth rate of the forest. Increases in soil bulk density above 10 per cent have been shown to be detrimental to tree growth for a number of pine and fir species.

Soil disturbance can also disrupt the structure of the soil and alter soil horizons, affecting soil productivity. Soil displacement results in the removal of one or more soil horizons, including the forest floor, during harvesting activities; this can include deep, long and wide gouges or scalps. Soil displacement can also intentionally occur while preparing harvest sites for tree planting. It is important to separate positive soil displacement, intended to benefit seedling growth, from negative, unwanted displacement that would reduce long-term site productivity. Erosion is the movement of soil through the action of wind or water, including splash, rill and gully erosion.

The monitoring program has been in place for five years. Data collected from across the province for the indicators of soil disturbance and compaction has been analysed, forming the basis for assessing this indicator.

Overview of Indicator #9 Assessment		
State Fair	**Trend** Improving	**Information** Adequate

Measures:

9-1 Soil compaction and surface disturbance (rutting, scalping, gouging, etc.) and erosion of harvested areas that have undergone post-harvest treatments

9-2 Soil compaction of in-block roads and landings that have undergone post-harvest treatments

Indicator Measure 1:

9-1 Soil compaction and surface disturbance (rutting, scalping, gouging, etc.) and erosion of harvested areas that have undergone post-harvest treatments

The monitoring program has been designed to monitor the occurrences of soil compaction based on the changes to soil bulk density. The program assesses compaction at soil depths of 10 and 20 centimetres (cm) in randomly selected cutblocks. These two depths were selected to determine the depth of soil compaction from forest activities.

Figure 6a displays the impacts of forest management activities on soil bulk densities at the 10 cm soil depth within the harvest block by major soil orders. Across these large groupings of soil orders, the data indicates a small increase in soil bulk density in the harvest block compared to the adjacent uncut forest. Because this data is not conclusive, the program will continue to monitor soil bulk densities at the 10 cm soil depth.

Figure 6b presents the impacts of forest management activities on soil bulk densities at the 20 cm soil depth within the harvest block by major soil orders from across the province. The data shows no impacts of forest management activities on increasing soil compaction at this depth. Therefore, sampling the bulk density at this depth has been discontinued.

Figure 6a: Soil Bulk Density at 10 cm Depth for Cutblocks by Soil Group

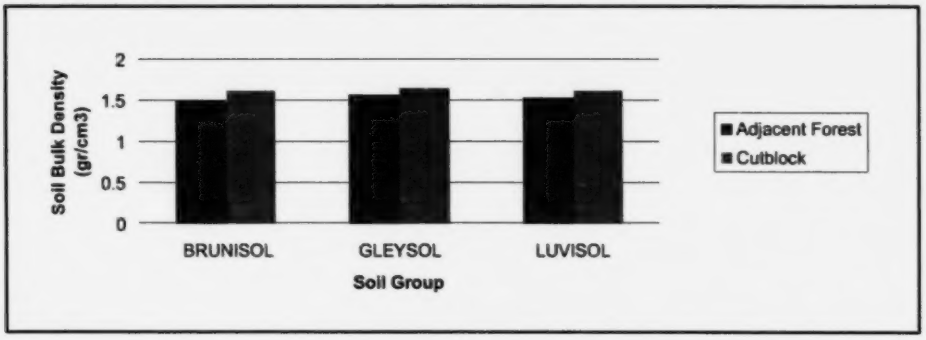


Figure 6b: Soil Bulk Density at 20 cm Depth for Cutblocks by Soil Group

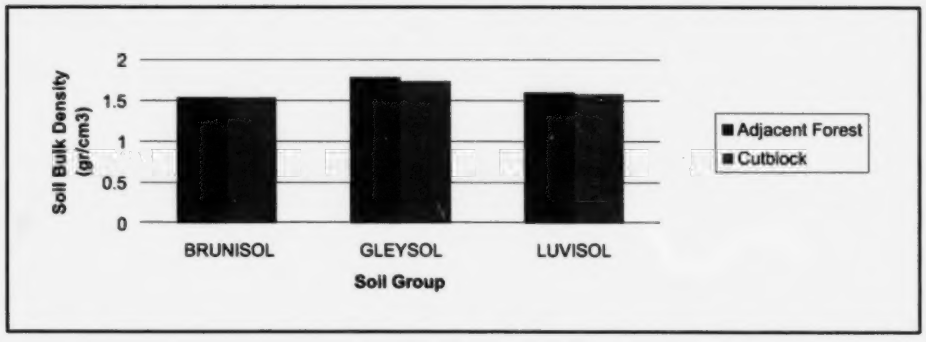
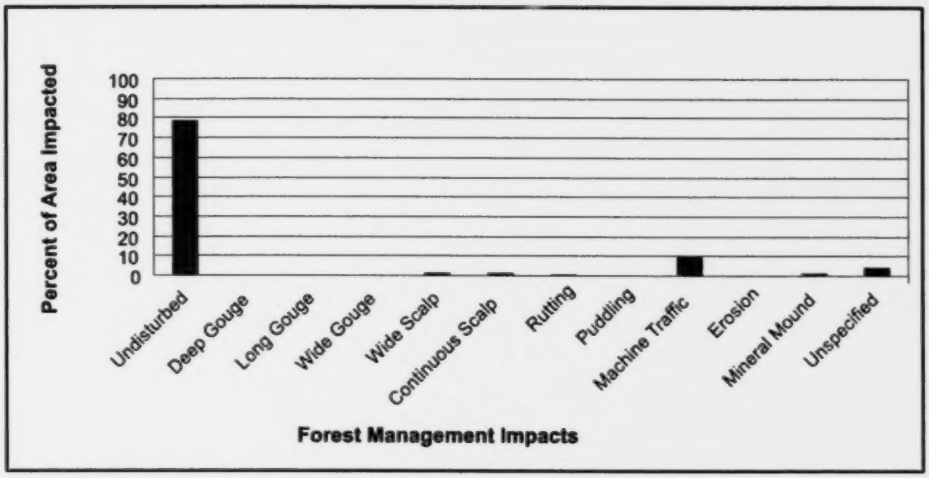


Figure 6c deals with soil disturbance observed in the harvest block. In general terms, the amount of disturbance is small, but there is a concern with rutting. Rutting, although only identified as a soil disturbance, can cause both soil disturbance (loss of soil horizons etc.) and increased bulk density, causing further disturbances such as puddling. All these impacts result in loss of soil productivity. Rutting is regulated by provincial standards, which limit the amount of rutting (based on depth and length criteria) to one per cent of the area of the harvest block surveyed. The monitoring program showed that, the amount of rutting in sample blocks is below the provincial standard. Further work will be done to determine the cause of the rutting that does occur.

Figure 6c: Mean Percentage of Area of Cutblock with Soil Surface Disturbance Due to Forest Management Activities



Adequacy of Information for Indicator Measure 1:

- The information collected by the monitoring program is adequate to indicate where problems exist and to point to areas requiring further investigation. Rutting is an example of the latter.
-

Indicator Measure 2:

9-2 Soil compaction of in-block roads and landings that have undergone post-harvest treatments

The bulk densities at both the 10 and 20 cm depths for in-block roads and landings were significantly higher than the adjacent undisturbed forest. On some licence areas, landings are not used but there are still in-block roads. Forest companies must reclaim in-block roads and landings within two years of the completion of the forest management activities. The roads must be decompacted and the surface organic layers and mineral soil that was removed must be spread back over the reclaimed area. The intent is to return the area to a productive state.

Referring to Figures 6d & 6e, data analysis shows that soil bulk densities in reclaimed in-block roads and landings are still significantly higher than undisturbed areas. This indicates that decompaction methods still need improvement. The intent of the program is to monitor the soil impacts after all the forest management activities, including the decompaction of in-block roads and landings, have been completed. High bulk density values were found on some sites. The results demonstrate a need to continue sampling compaction on roads and landings to ensure that decompaction efforts are effective.

Figure 6d: Soil Bulk Density at the 10 cm Soil Depth for In-Block Roads and Landings

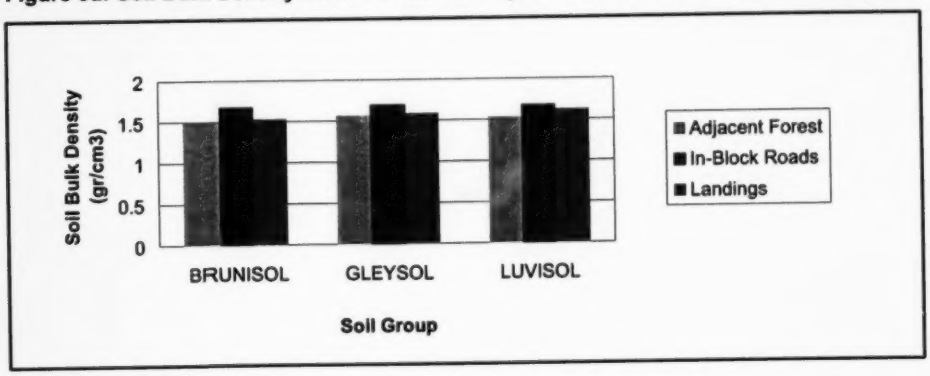
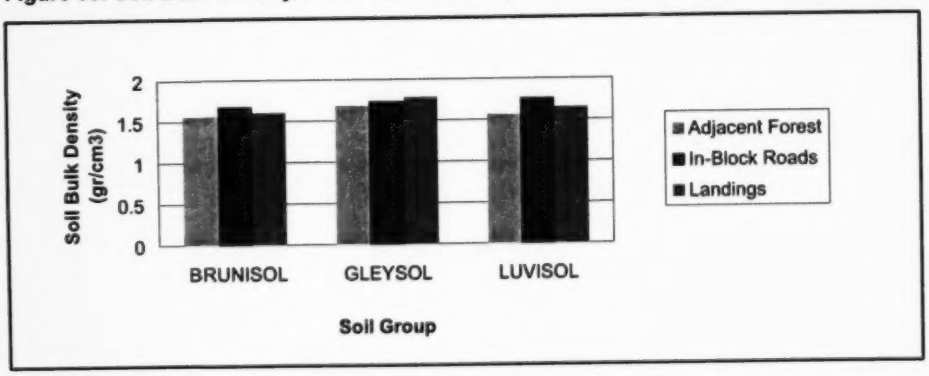


Figure 6e: Soil Bulk Density at the 20 cm Soil Depth for In-Block Roads and Landings



Adequacy of Information for Indicator Measure 2:

- The information collected by the monitoring program provides information adequate to assess soil compaction and the effectiveness of mitigation techniques.

Indicator Summary and Forest Service Assessment:
Indicator #9 Soil Disturbance Monitoring Trends Associated with the Provincial Forest Management Effects Monitoring Program

State
Fair

The monitoring of soil bulk density and surface soil disturbance on areas harvested and renewed has shown that there is no significant impact of forest management activities on the compaction of the soil types sampled in the harvested blocks. Surface disturbances are, for the most part, insignificant except for rutting. The amount of rutting is below that allowed by provincial standards. The impact of this amount of rutting on site productivity will be studied further and, if necessary, provincial standards will be changed.

Monitoring of soil properties on reclaimed roads and landings has shown that compaction is still an issue, particularly at the 20 cm depth. Although, decompaction above 20 cm is accomplishing what is required, the lower depths remain compacted. This result is likely due to the equipment and/or its application i.e. the equipment is not penetrating deep enough into the soil. The ministry is working with the forest industry to explore new decompaction techniques and their effectiveness. Compaction at this depth will continue to be monitored as new decompaction techniques are investigated.

Trend
Improving

The trend in the monitoring data shows improvement as forest companies adjust their forest management activities to reduce compaction and rutting. Larger, high-flotation tires and the increase in mechanical logging are examples of changes that have resulted in less compaction and rutting. Companies routinely assess ground conditions before harvest, which helps to reduce soil impacts on wet sites.

Based on the data analysis, forest companies are reviewing their decompaction activities to improve decompaction of in-block roads and landings. In some cases, landings have been done away with altogether. As a mitigation approach, techniques for rehabilitating ruts, as well as systems for predicting sites which may be more susceptible to rutting, must be explored.

Information
Adequate

The monitoring program provides the information needed to determine if significant soil damage is occurring and what additional investigation may be required. The impact of low but persistent amounts of rutting serves as an example. The analysis of the soil bulk density data indicated that soil compaction at the 20 cm depth on the cutover area is insignificant so there will be no further sampling at this depth. Sampling at the 10 cm soil depth will continue.

The program will continue to monitor soil disturbances, especially rutting, to ensure that mitigation activities are working.

Not all soil types have been sampled so future soil monitoring will include under-sampled soil types. Although there have been improvements in soil protection practices, monitoring will continue to ensure that new practices effectively resolve problems identified in the first phase of sampling.

#12 Contribution of Timber Products to the Gross Domestic Product
#13 Contribution of Non-Timber Forest Products and Forest-Based Services to the Gross Domestic Product
#14 Forest Industry Sector Employment Trends
#15 Maximizing the Distribution of Benefits by Licence Allocation
#16 Annual Harvest of Timber Relative to the Sustainable Harvest Level

Indicator # 12 Contribution of Timber Products to the Gross Domestic Product

CCFM Element:
Economic Benefits

Provincial Value:
Sustainable Economic Benefits Over the Long Term

Provincial Objective:
Maximize the Economic Benefits Derived from the Forest without Compromising the Integrity of the Forest Ecosystem

Introduction

The people of Saskatchewan receive many economic benefits from the forest. Timber products, non-timber forest products and forest-based services are produced, consumed and traded, both domestically and internationally. Wealth from the forest industry sector flows to the people of Saskatchewan through the market economy, which can be measured with economic indicators such as gross domestic product.

Gross domestic product (GDP) by industry equals output by the industry minus the value of intermediate inputs that were purchased from other industries, domestic or foreign. Value-added is a measure of how much an industry has contributed to the value of its output over and above the value of intermediate inputs. In short, provincial GDP is designed to independently portray the production activity of a province. Changes in the level of production are key indicators of economic activity. GDP is used by government, businesses, academic researchers and the general public, in order to evaluate the performance of the economy and to explore past trends in production.

Overview of Indicator #12 Assessment

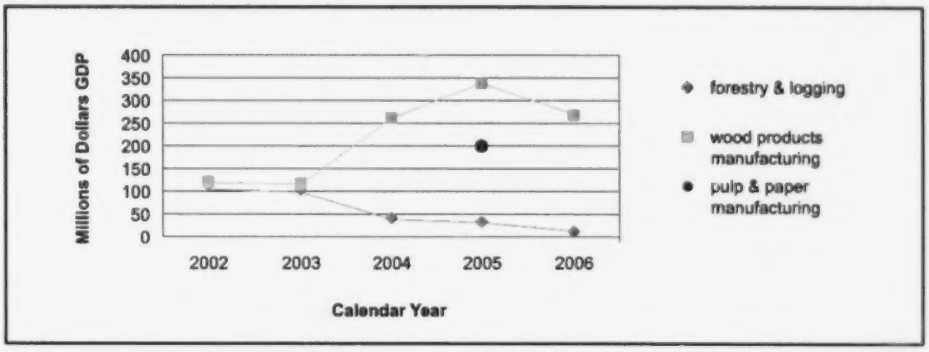
State	Trend	Information
Poor	Uncertain	Adequate

Measures:
12-1 Monetary contribution of Saskatchewan timber products to the provincial GDP
12-2 Ranking of timber products relative to other industries in the province, and to other provinces

Indicator Measure 1:

12-1 Monetary contribution of Saskatchewan timber products to the provincial GDP

Figure 7: Wood Products Manufacturing, Pulp & Paper Manufacturing & Forestry and Logging GDP



Source: SEPH GDP by Industry data 2002 chained dollars, Stats Canada
Pulp & paper GDP stats were confidential

As Figure 7 shows, wood products manufacturing made its largest contribution to the provincial economy in 2005, with a provincial GDP of 339.4 million dollars from this sector. Wood products manufacturing includes sawmills, veneer and plywood facilities, and fiberboard mills. Annual pulp and paper manufacturing GDP statistics were not included in the table as it remained confidential, but are estimated at 200 million dollars for 2005. In 2005, the forestry and logging industry contributed 33.2 million dollars to the provincial GDP; this industry includes road building, hauling, forest renewal and logging. In 2005, the total GDP for the entire forest industry sector was 572.6 million dollars. In November 2005, Weyerhaeuser announced its plans to close its Prince Albert pulp and paper mill. The facility closed in April 2006, negatively affecting the province's entire forest sector in the short term.

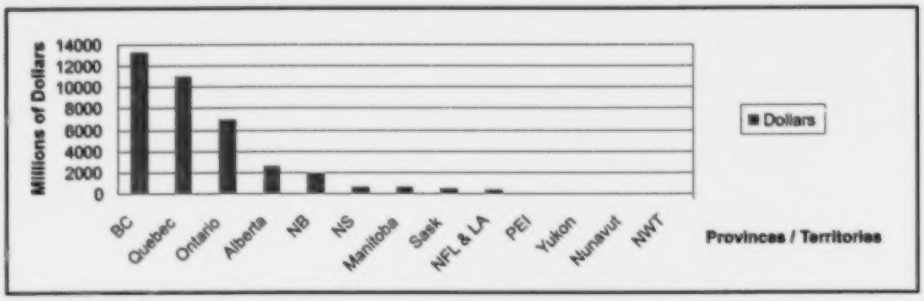
The wood and paper manufacturing industry sectors made up between 15 to 25 per cent of the total manufacturing GDP for the province of Saskatchewan between 1999 and 2006.

Adequacy of Information for Indicator Measure 1:

- It is difficult to depict the regional economic importance of the forest industry sector for specific forest-dependent communities.
- GDP information is not lacking for the most part but some information, such as the pulp and paper GDP statistics, remains confidential.

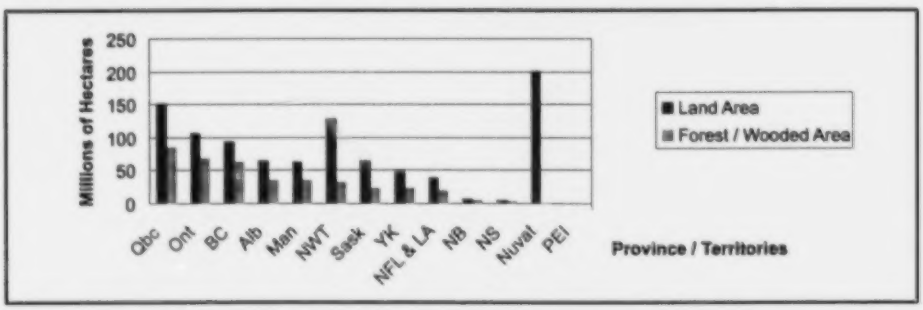
Additional Information:
Natural Resources Canada's web based dataset provides a sense of the value of provincial exports. Nationally, Saskatchewan is considered a small player when it comes to forestry, as indicated in Figures 8 and 9.

Figure 8: Value of Exports



Natural Resources Canada: 2006 Statistical Data

Figure 9: Land Area & Forest Area by Province / Territories

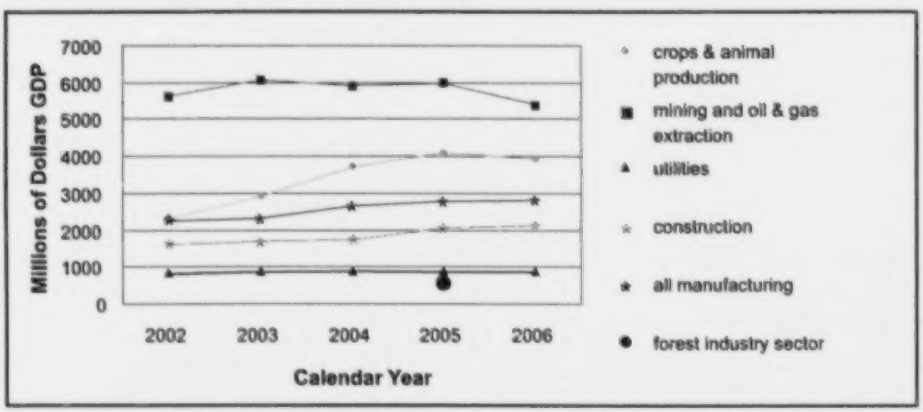


Natural Resources Canada: 2004/2005 Annual Report

Indicator Measure 2:

12-2 Ranking of timber products relative to other industries in the province and to other provinces

Figure 10: Top GDP Goods Producing Sectors



Source: SEPH GDP by Industry data 2002 chained dollars, Stats Canada

Referring to Figure 10, in 2005 the forest industry sector ($572.6 million) ranked fifth amongst the province's goods producing industries. First is mining, including oil and gas extraction. Second is agriculture, third is construction and utilities are ranked fourth.

Adequacy of Information for Indicator Measure 2:

- Data source was Statistics Canada.

Indicator Summary and Forest Service Assessment: Indicator #12 Contribution of Timber Products to the Gross Domestic Product	
State Poor	The forest sector is a significant goods producing industry in the province, ranked fifth with a GDP in 2005 of 572.6 million dollars. Saskatchewan's forest sector has been negatively affected by various global influences, including the increasing value of the Canadian dollar, a weak demand for lumber in the U.S. and, a continued world decline in demand for fine paper and newsprint. Also a factor is the increase in wood products imports into traditional North American forest product markets from countries with faster growing trees and lower production costs. The current poor contribution of timber products to the provincial GDP is not representative of potential future contributions from the forest sector. Wood fibre and other social and economic values from our forest are the building blocks of new engineered wood products, bioenergy production and social-economic products that are now experiencing increased demand in the global economy.
Trend Uncertain	The current trend of the forest sector GDP has deteriorated from the higher levels experienced from 2003 to 2005. Economic benefits derived from the forest sector could continue to decline until a re-alignment of the forest industry to global market demands creates a turnaround in the North American forest sector and a more competitive environment for a restructured forest industry in Saskatchewan.
Information Adequate	Although it is difficult to depict the economic importance of the forest industry sector by regional areas, there was adequate information available to assess this indicator regarding GDP at the provincial level.

Indicator # 14 Forest Industry Sector Employment Trends

CCFM Element:
Economic Benefits

Provincial Value:
Sustainable Economic Benefits Over the Long Term

Provincial Objective:
Maximize the Economic Benefits Derived from the Forest without Compromising the Integrity of the Forest Ecosystem

Introduction

The people of Saskatchewan receive many economic benefits from the forest. Timber products, non-timber forest products and forest-based services are produced, consumed and traded internationally. In order to ensure that economic benefits continue to flow to the people of Saskatchewan, it is vital to maintain a fair and competitive investment climate within the forest sector. A competitive rate of return is essential if Saskatchewan's various forest-based industries are to attract the necessary capital to maintain their capacity to create jobs and incomes for Saskatchewan people.

Overview of Indicator #14 Assessment

State	Trend	Information
Poor	Uncertain	Partial

Measures:

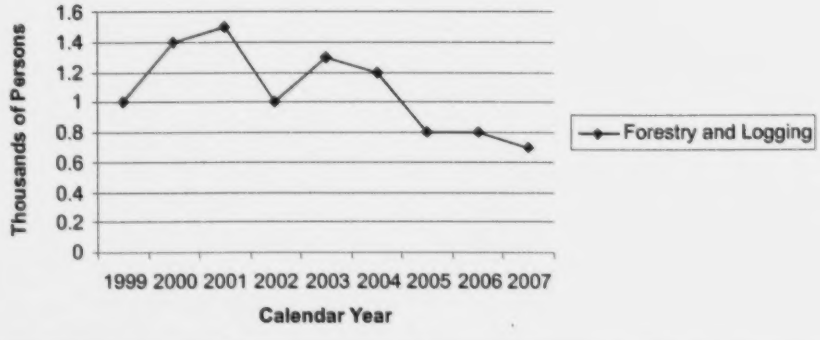
14-1 Forest industry sector employment trend since 1999

14-2 Forest industry sector employment rank relative to other employment sectors in the province

Indicator Measure 1:

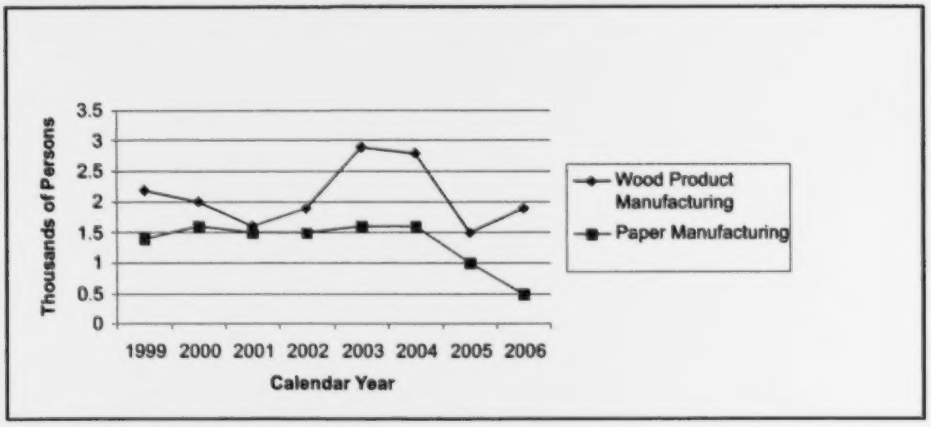
14-1 Forest industry sector employment trend since 1999

Figure 11: Forestry and Logging Sector Direct Employment



Source: Labour Force Survey Estimates, Stats Canada

Figure 12: Paper and Wood Products Manufacturing Direct Employment



Source: Natural Resources Canada Statistics

As Figure 11 indicates, direct forest sector employment for the forestry and logging workforce has fluctuated over the years since 1999, and has been on a downward trend in the last few years. Direct forestry and logging sector employment has averaged 1089 persons since 1999. Wood products manufacturing, which includes sawmills, veneer and plywood mills, OSB mills, has employed 2,113 persons on average. Paper manufacturing, which includes pulp, paper and paperboard mills, employs an average of 1,338 persons. Natural Resource Canada statistics are available to 2006; the 2007 statistics are expected to show a drastic drop in employment for all forest sector employment types, given the state of the forest sector in 2006.

According to the September 2006 report of Premier's Task Force on Forest Development, there are 50 forest dependent communities in the north and central areas of the province. It is estimated that, in 2005, the forest sector accounted for direct and indirect 10,000 jobs.

Adequacy of Information for Indicator Measure 1:

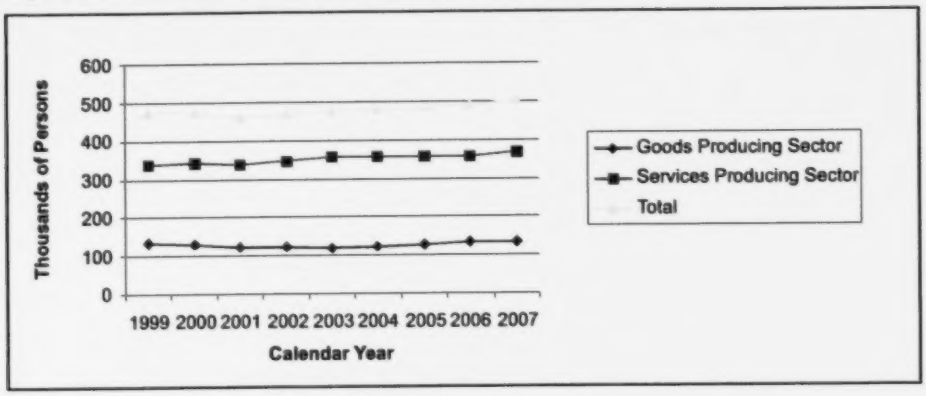
- A method of estimating indirect employment has not been established in this report.

Indicator Measure 2:

14-2 Forest industry sector employment ranked relative to other employment sectors in the province

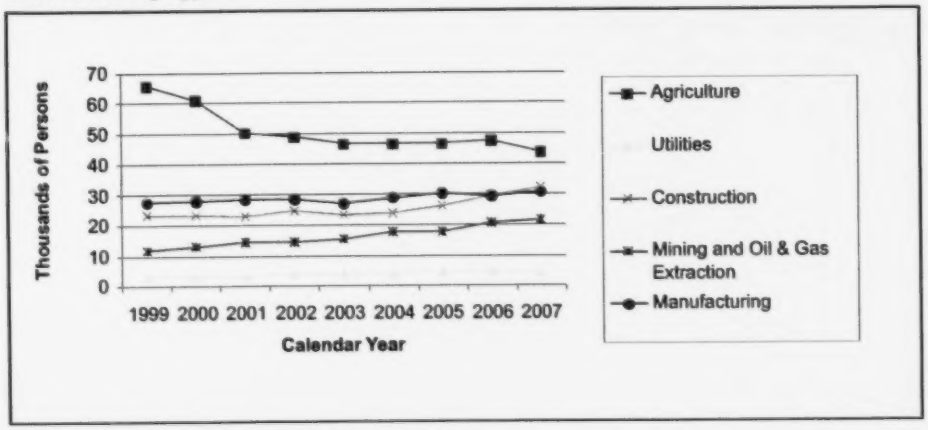
Figures 13 and 14 provide some perspective on how forest industry sector employment compares to other industries in the province. Figure 12 shows the total employment for all industries in the province, breaking it down into two general industry sectors: goods producing and services producing. The forest industry sector is classified as goods producing. When the average employment for the forestry sector (4,540 persons) is compared to other sectors, shown in Figure13, it becomes evident that the forestry sector is a much smaller generator of employment than bigger goods producing industries like agriculture, mining and oil and gas extraction.

Figure 13: Saskatchewan Employment by Sector by Year



Source: Labour Force Survey Estimates, Stats Canada

Figure 14: Saskatchewan Employment in the Goods Producing Sector by Select Industry Type



Source: Labour Force Survey Estimates, Stats Canada

Adequacy of Information for Indicator Measure 2:

- There was no attempt made to depict the importance of the forest sector industry for the 50 forest dependent communities in the north and central areas of the province, where forestry is a significant employer, as information is not readily available.

Indicator Summary and Forest Service Assessment: Indicator #14 Forest Industry Sector Employment Trends	
State Poor	The forest industry sector is a significant industry in the province (see indicator #12). However, it does not create a large number of direct jobs in the province relative to other industry sectors. Nonetheless, the industry is an important source of jobs in forestry dependent communities in northern Saskatchewan. The forest sector has averaged 4,540 direct jobs since 1999; however, various global influences such as the increasing value of the Canadian dollar, the weakening demand for lumber in the U.S., the worldwide decline in demand for fine paper and newsprint, and mill closures in Saskatchewan are causing reductions in direct and indirect forest sector employment in the province. The current state of economic benefits derived from employment in the Saskatchewan forest industry sector is considered poor.
Trend Uncertain	As stated above, the trend for forest industry sector employment is deteriorating, from higher levels as experienced in 2003 and 2004. The greatest impact is seen in direct jobs associated with production facilities. Indirect employment decline has generally been offset by migration of workers to service and supply activities related to other natural resource production sectors. Employment in the forest industry sector will decline to a baseline level consistent with Saskatchewan's position in domestic and global lumber, pulp and OSB markets. As the Canadian forest industry re-aligns to new global market demands, a restructured forest industry in Saskatchewan will cause direct employment to rise, with an associated positive impact on indirect employment.
Information Partial	Although it is difficult to depict the economic importance of the forest industry sector by regional areas, there was adequate information available to assess this indicator regarding GDP at the provincial level.

Indicator # 15 Maximizing the Distribution of Benefits with Licence Allocation

CCFM Element:
Distribution of Benefits

Provincial Value:
Fair Distribution of Benefits

Provincial Objective:
Maximize the distribution of benefits derived from the forest without compromising the integrity of the forest ecosystem

Introduction

Sustainable forest management involves economic development. This requires consideration of how development is managed and how benefits from it are distributed to society.

Overview of Indicator #14 Assessment		
State ☐ Fair	**Trend** ●—● Uncertain	**Information** ● Adequate

Measures:

15-1 Area and percentage of the commercial Provincial Forest under long-term tenure (greater than or equal to 20 years)

15-2 Area and percentage of the commercial Provincial Forest under short term tenure (less than five years)

15-3 Percentage of areas under tenure covered by approved integrated forest land use plans

Indicator Measure 1:

15-1 Area and percentage of the commercial Provincial Forest under long-term tenure (greater than or equal to 20 years)

The Forest Resources Management Act allows the minister to grant licences to harvest forest products. Long-term tenure is granted through forest management agreements (FMA). FMAs have a term of 20 years, renewable every five years for a further five years, provided that the licensee is not in default of any terms of the agreement. An FMA contains provisions setting out the rights of the licensee for harvesting forest products and the responsibilities of the licensee for management and renewal of the forest within the FMA area. FMA licensees must prepare a forest management plan for the term of the agreement and annually submit a five-year operating plan. Once every 10 years, before an FMA is extended, the licensee must submit a revised forest management plan to the minister for approval.

The four forest management agreements in the province are shown in Table 10. Table 11 shows the gross areas and percentage of the commercial Provincial Forest covered by FMAs.

Table 10: Forest Management Agreements in Saskatchewan as of March 31, 2008			
FMA Holder	**Date of Issue**	**FMA Amendment Dates and Other Related Dates**	**Forest Management Plan (FMP) Approval Date**
Prince Albert FMA – Weyerhaeuser Saskatchewan Ltd.	• Sept. 9, 1986	• October 30, 1989, amendment • April 1, 2000, amendment to reflect changes required by the Forest Resources Management Act, and changes to the area.	• Jan. 26, 2001
Pasquia-Porcupine FMA – Weyerhaeuser Saskatchewan Ltd.	• May 14, 1999	• November, 1999, FMA assigned to Weyerhaeuser Canada Ltd. from SaskFor MacMillan Limited Partnership	• May 13, 1999
L&M Wood Products (1985) Limited	• March 7, 1987	• Jan 9, 2008, FMA assigned to L&M Wood Products Limited Partnership	• Nov. 18, 1999
Mistik Management Ltd.	• June 17, 1988	• Feb. 2, 1989, amendment • Aug.18, 1989, amendment • June 27, 1990, amendment • April 24, 1998, FMA assigned to Mistik Management Ltd. • Nov. 1, 2002, amending agreement to reflect changes required by the Forest Resources Management Act, changes to the area, and assignment of rights and obligations for part of the area to Meadow Lake OSB Limited Partnership	• May 13, 1997

Table 11: Gross area and percentage of commercial forest under long-term tenure		
Forest Management Agreement Area	**Gross Area of FMA (ha)**	**Percentage of Commercial Provincial Forest**
Mistik Management Ltd	2,035,402	16
L&M	70,988	0.6
Weyerhaeuser PA	3,163,338	25
Weyerhaeuser PP	1,998,086	15.7
Total FMA	**7,267,814**	**57.3**
Total Commercial Provincial Forest	12,706,224	

Adequacy of Information for Measure 1:

- Actual FMA boundaries have not been updated geospatially since they were established, and should be revised for accuracy, but is not significant to impact the assessment.

Indicator Measure 2:

15-2 Area and percentage of the commercial Provincial Forest under short-term tenure. (less than 5 years)

Under The Forest Resources Management Act, short-term area-based tenure is granted through area-based term supply licences (TSLs). Area-based TSLs have been issued for five-year terms. Each licence has a trust fund for forest management fees, which are to be used for forest management activities, such as reforestation. Table 12 shows the gross areas of area-based TSLs and the percentage of the Commercial Forest Zone.

Table 12: Area-based TSL Terms, Gross Area and Percentage of Commercial Forest

Area-Based TSL	Term	Gross Area of TSL (ha)	Percentage of Commercial Provincial Forest
North West Communities Wood Products Ltd.	November 22, 2002 – March 31, 2008	769,803	6.1
Kitsaki-Zelensky Partnership	October 6, 2003 – March 31, 2008	594,433	4.7
Mee-Toos Forest Products Ltd.	February 4, 2005 – March 31, 2010	1,610,503	12.7
Meadow Lake OSB Ltd. Partnership	October 31, 2007 – October 31, 2012	203,804	1.6
Total		**3,178,503**	**25.1**

Volume-based TSLs are licences for up to five years that are situated within an FMA, an area-based TSL, or other forest areas. Responsibility for renewal lies with the primary forest manager for the area. A volume-based term supply licence holder has more security of wood supply than an operator with annual forest product permits.

Table 13 provides the number of volume-based TSLs and forest product permits (FPP) harvesting operations. These can take place anywhere in the Commercial Forest Zone (within an FMA or area-based TSLs, or on areas not under area-based tenure). Table 14 depicts which areas within the Commercial Forest Zone where there are no area-based tenures.

Table 13: Volume-based Term Supply Licences and Forest Product Permits Issued for Commercial Timber Harvest in the Commercial Forest Zone

Year	Number of Volume Based TSLs Issued and Maintained*	Number of Commercial FPP Issued**
1999/00	0	217
2000/01	0	130
2001/02	0	135
2002/03	0	176
2003/04	2	162
2004/05	11	112
2005/06	16	87
2006/07	18	74

*Most volume-based TSLs have been issued on the Weyerhaeuser Prince Albert and Weyerhaeuser Pasquia-Porcupine FMAs, one on the Mee-Toos TSL and one in the Island Forests.
**Most FPP volumes come from the Island Forests, Weyerhaeuser PA FMA and Mee-Toos TSL.

Table 14: Areas Within the Commercial Forest with no Area-based Tenures		
Forest Area	**Gross Area (ha)**	**Percentage of Commercial Provincial Forest**
Island Forests	225,878	1.8
Turnor East	606,350	4.8
Turnor West	492,234	3.9
Suggi Lowlands	566,811	4.5
Nemeiben	218,144	1.7
Total Area	2,109,417	**16.7**

Table 15 is a summary for both indicator measures for area and percent of the commercial Provincial Forest under short- and long-term tenures.

Table 15: Percentage of Tenure Type for Commercial Forest Summary	
Forest Area Tenure Type	**Percentage of Commercial Provincial Forest**
FMA	58
Area-Based TSL	25
No area-based tenures	17
Total	100

Adequacy of Information for Measure 2:

- Some of the information presented for FPP from 1999/00 to 2003/04 included permits issued in provincial parks; these were combined with those in the commercial forest in the database and could not be separated out. Nonetheless this is not significant enough to impact the assessment.

Indicator Measure 3:

15-3 Percentage of area-based tenures covered by approved integrated forest land use plans

The Ministry of Environment started developing integrated forest land use plans to co-ordinate policies, programs and activities to guide and regulate existing and potential uses of land within the planning area. Where such plans are in place (see Table 16), development decisions can be made by looking at the whole ecosystem – soil, water, trees, animals and plants – to meet environmental, cultural, social and economic objectives. The analysis shows that 27 per cent of FMA areas and 51 per cent of area-based TSL areas are covered by approved integrated forest land use plans.

Table 16: Total number and hectares of approved integrated forest land use plans			
Integrated forest land use plans	**Gross area (ha)**	**Percentage of the planning area that is commercial Provincial Forest**	**Tenure Holder Affected**
Pasquia-Porcupine	2,170,336	99%	Weyerhaeuser Pasquia- Porcupine FMA
Amisk-Atik	4,355,806	51%	Mee-Toos Area -based TSL
Total Area of IFLUPS	6,526,142		-

Adequacy of Information for Measure 3:

- The analysis conducted had some inaccuracy in the overlap of the integrated forest land use plan boundaries with the forest area boundaries, but is not significant enough to impact the assessment.

Indicator Summary and Forest Service Assessment: Indicator #15 Maximizing the Distribution of Benefits with Licence Allocation	
State Fair	The Forest Service Branch of the Ministry of Environment uses different forms of tenure/ licence arrangements to secure economic benefits from forest resources and ensure sustainable forest management. Almost 60 per cent of the province's Commercial Forest Zone is in long-term tenure arrangements with forest management plans in place. About 25 per cent is allocated as area-based TSLs. The remaining 16 per cent of the commercial forest has no area-based tenure. Not all of the commercial forest is fully utilized. Since FMAs provide the greatest assurance of sustainable forest management – required forest management plans, which undergo environmental impact assessments, plus renewal obligations – the long-term goal is to move area-based TSLs to FMAs. Four more integrated land use plans are in development; when completed, they will provide information about sustainable levels of development in the northern part of the Provincial Forest and for two of the Island Forests.
Trend Uncertain	The closure of various mills like the Weyerhaeuser's pulp and paper mill, Big River Sawmill has temporarily destabilized the forest industry in Saskatchewan. However, the changes brought about by the closures and potential mill sales provide an opportunity to restructure the industry, to meet both industry and government needs while maintaining a sustainable forest.
Information Adequate	Four additional integrated forest land use plans are in development but not yet completed.

Indicator # 16 Annual Harvest of Timber Relative to the Sustainable Harvest Level

CCFM Element:
Sustainability of Benefits

Provincial Value:
No loss of benefits

Provincial Objective:
Maintain or enhance the sustainability of benefits derived from the forest without compromising the integrity of the forest ecosystems.

Introduction

Sustainability of the socio-economic well-being derived from the forest products industry depends upon the sustainability of timber harvesting. This indicator compares the actual volume of timber harvested to the available volume. The available volume is referred to as the annual allowable cut (AAC), which is the maximum sustainable timber volume that can be harvested each year, and is approved by the minister. AAC is also known as Harvest Volume Schedule (HVS) in Saskatchewan.

Overview of Indicator #15 Assessment		
State Fair	**Trend** Uncertain	**Information** Partial

Measures:
16-1 Actual volume of timber harvested compared to the AAC
16-2 Provincial timber supply forecast

Indicator Measure 1:

16-1 Actual volume of timber harvested compared to the AAC

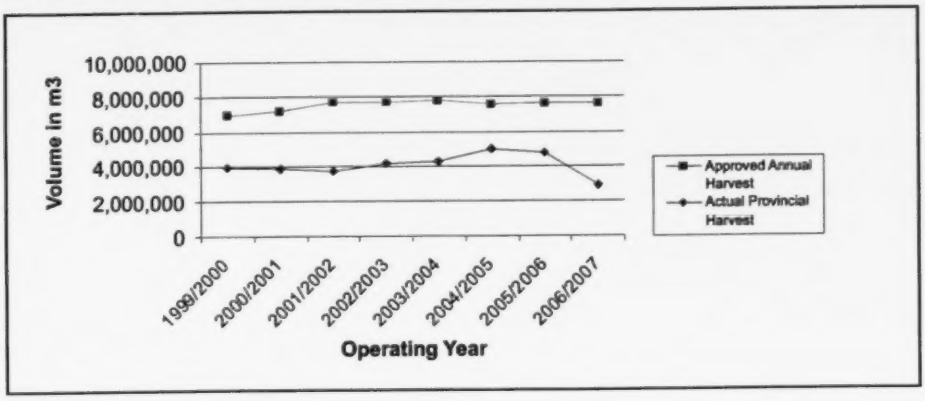
The actual annual harvest compared to the AAC for the Provincial Forests since 1999/2000 is summarized in the Table 17 and Figure 15.

Table 17: The Actual Annual Harvest Compared to the AAC for the Provincial Forest

Provincial Forests	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07
AAC - SW	4,253,061	4,320,561	4,320,561	4,320,561	4,350,238	4,249,584	4,285,584	4,262,184
AAC - HW	2,722,659	2,862,216	3,370,229	3,370,229	3,431,498	3,316,539	3,316,539	3,366,913
AAC Total	**6,975,720**	**7,182,777**	**7,690,790**	**7,690,790**	**7,781,736**	**7,566,123**	**7,602,123**	**7,629,097**
Actual - SW	2,106,037	2,174,144	2,047,695	2,171,259	2,165,143	2,518,143	2,165,132	1,318,294
Actual - HW	1,860,155	1,695,737	1,657,422	1,995,989	2,089,731	2,456,389	2,593,821	1,612,309
Actual - Total	**3,966,192**	**3,869,881**	**3,705,117**	**4,167,248**	**4,254,874**	**4,974,532**	**4,758,953**	**2,930,603**
Balance - SW	2,147,024	2,146,417	2,272,866	2,149,302	2,185,095	1,731,441	2,120,452	2,943,890
Balance - HW	862,504	1,166,479	1,712,807	1,374,240	1,341,767	860,150	722,718	1,754,604
Balance - Total	**3,009,528**	**3,312,896**	**3,985,673**	**3,523,542**	**3,526,862**	**2,591,591**	**2,843,170**	**4,698,494**

Note: Table does not include data for the Suggi Lowlands and Nemeiben Provincial Forest areas.

Figure 15: Actual Harvest vs. Annual Approved Harvest



The provincial AAC is considered sustainable because the AAC determination process incorporates a wide variety of factors relevant to a healthy forest ecosystem. A diverse array of social, economic and ecological considerations are examined to ensure that future generations continue to enjoy as many or more benefits from our forested ecosystems as today's citizens. Some of the considerations when determining AAC levels include:

- how forests change over time;
- the rate of growth and associated yields of commercial tree species;
- the impact of fire and other natural forces of change in boreal forests;
- forest land dedicated to other uses which preclude or limit harvesting;
- harvest practices that are operationally feasible;
- the success of forest regeneration efforts; and
- consultations with the public about the variety of forest values they want in perpetuity.

The impact of these considerations is typically projected over 200 years into the future, or about two harvesting rotations. AACs are typically recalculated every 10 years, sooner if there are major disturbances such as fires.

As demonstrated in Figure 15, the total actual volume of timber harvested in the Provincial Forest has ranged from 38 to 68 per cent of the AAC. The significant drop in harvest levels during the 2006/07 operating year is due to severe market downturns, and resulting mill production reductions and closures in the province. This trend is expected to continue into 2007/08.

As the data demonstrate, provincial harvest rates are sustainable; however, there may be sustainability concerns for certain forest types at local or regional levels. For example, demand for white spruce and for timber close to mills can lead to rates of harvest that cannot be sustained in the long term. These issues will be further investigated and communicated in future reports.

Adequacy of Information for Indicator Measure 2:

- Issues relating to the sustainability of specific species or forest stands have not been addressed within this report; these will be included in future reports.

Indicator Measure 2:

16-2 Provincial timber supply forecast

Within the next 10 years, the provincial timber supply is not forecasted to change significantly.

Timber supply forecasts are made with the assumption that harvest rates and forest management practices will occur as predicted. Recent and ongoing changes to the forest sector in Saskatchewan will require that some of these assumptions be adjusted. This will, in turn, alter timber supply forecasts.

Adequacy of Information for Indicator Measure 2:
Determining sustainable harvest levels relies on a variety of factors; two of the most important include current forest inventories and state-of-the-art computer modeling. The majority of Crown forest areas have sustainable harvest levels that were determined based on reasonably current forest inventories, and state-of-the-art computer models. However, significant Crown forest areas still have sustainable harvest levels based on older forest inventories and incomplete or outdated computer models.

Indicator Summary and Forest Service Assessment: Indicator #16 Annual Harvest of Timber Relative to the Sustainable Harvest Level	
State Fair	While this indicator shows that the integrity of forest ecosystems is not generally threatened, it does show that economic benefits from timber processing are far below their potential.
Trend Uncertain	Global market competitiveness is fundamentally changing the Canadian forest sector. This impact is still being felt in Saskatchewan and it may be several years before the province's forest sector can restructure itself to remain globally competitive. The impact of the Softwood Lumber Agreement with the United States has also severely limited growth opportunities for the Saskatchewan forest sector. Despite these significant short-term challenges, the potential to rebound from recent mill production curtailments and closures is very good. Full utilization of the AAC remains a long-term goal; however, the current trend of this indicator is seen as uncertain.
Information Partial	The information necessary to track these indicators is adequate. Current forest inventories and the use of state-of-the-art computer models to determine accurate sustainable harvest levels is still lacking in certain areas of the province.

#17	Extent of Consultation with Aboriginal People in Forest Management Planning and in the Development of Policies and Legislation Related to Forest Management
#18	Trends in Aboriginal Forestry Partnership
#19	Aboriginal Traditional Land Use Knowledge
#20	Proportion of Participants who are Satisfied with Public Involvement Processes in Forest Management in Saskatchewan
#21	Rate of Compliance with Forest Management Laws and Regulation
#22	Investment in Forest Research, Timber Products Industry Research and Development and Education

Indicator # 18 Trends in Aboriginal Forestry Partnership

CCFM Element:
Aboriginal and Treaty Rights

Provincial Value:
Respect for aboriginal and treaty rights

Provincial Objective:
To ensure aboriginal and treaty rights are respected within the context of planning and implementing forest activities

Introduction

The provincial government and aboriginal organizations have entered into memoranda of understanding and partnership agreements in order to further opportunities for aboriginal people in the forest sector. Through these, there have been forest management and economic development opportunities such as wood supply tenures and equity ownership in mills. Aboriginal organizations, both First Nation and Métis, have partnered with forest industry to invest in Saskatchewan's forest sector.

Overview of Indicator #18 Assessment

State	Trend	Information
Fair	Improving	Adequate

Measures:

18-1 Volume in cubic meters of softwood/hardwood under licence to aboriginal owned and/or partnered forest industry businesses

18-2 Area of Provincial Forest over which there is an area-based licence held by aboriginal owned and/or partnered forest industry businesses

Indicator Measure 1:

18-1 Volume in cubic meters of softwood/hardwood under licence to aboriginal owned and/or partnered forest industry businesses

In the last ten years, particularly since 1999, there has been an increasing interest and investment in the forest industry by aboriginal organizations. There have been partnerships developed by aboriginal people, with industry and with provincial government agencies, to capture socio-economic opportunities as shown in Table 18.

Table 18: Overview of Volume in Cubic Meters of Softwood/Hardwood Under Licence to Aboriginal Owned and/or Partnered Forest Industry Businesses

Aboriginal Interest	Tenure	Volume (m3) (softwood/hardwood)	Established/ Renewed
Mistik Management Ltd. (Meadow Lake Tribal Council)	Mistik Forest Management Agreement (FMA)	602,000/0	1997 Norsask 1998
Green Lake Métis Wood Products*	Forest Product Permit (FPP)	50,000/0	Pre-1999
Wapawekka Sawmill (partnership that includes 3 First Nations) Sawmill closed Indefinitely (2006)	Weyerhaeuser Prince Albert Forest Management Agreement	340,000/0	1999
North West Communities Wood Products Ltd.	Term Supply Licence (TSL) (five years)	251,000/100,400	2002/2008
Kitsaki-Zelensky Partnership	TSL (five years)	221,000/132,000	2003/2008
MLOSB	TSL (five years)	91,000/160,310	2007
Montreal Lake Forestry Operation	TSL (five years)	500/0 each year for 5 years	2004
First Nations Island Forest Management Inc.	TSL (three years)	10,000/ per 3 years	2004/2007
Mee-Toos Forest Products Ltd.	TSL (five years)	157,000/55,000	2005

* Green Lake Métis Wood Products has been inactive

Adequacy of Information for Indicator Measure 1:

- Data used to assess this indicator includes the volume under licence but does not reflect actual harvest. Actual harvest has been significantly less for several aboriginal owned and/or partnered forest industry businesses. Full utilization of the allocated volume would enhance aboriginal interests.

Indicator Measure 2:

18-1 Area of Provincial Forest over which there is an area-based licence held by aboriginal owned and/or partnered forest industry businesses

Table 19 represents the area of Provincial Forest over which there is an area-based licence held by aboriginal owned and/or partnered forest industry business.

Table 19: Overview of Area-based Tenures Under Licence to Aboriginal Owned and/or Partnered Forest Industry Businesses		
Area-based Tenure	**Gross area (ha)**	**% of Commercial Provincial Forest**
Mistik Management Ltd FMA	1,926,367	15.2
Prince Albert FMA	3,315,231	26.1
North West Communities Wood Products Ltd. TSL	778,263	6.1
Mee-Toos Forest Products Ltd. TSL	1,672,211	13.2
Kitsaki-Zelensky Partnership Ltd. TSL	538,553	4.2
Meadow Lake OSB Ltd. Partnership TSL	238,540	1.9
Total Area (area -based tenure)	8,469,165	66.6

Total commercial provincial forest, 12,706,224 hectares

Adequacy of Information for Indicator Measure 2

- The information used to assess this measure is adequate.

Indicator Summary and Forest Service Assessment: Indicator #18 Trends in Aboriginal Forestry Partnership		
State	Fair	The information presented represents a snapshot of the state of aboriginal forestry partnerships in the province. Saskatchewan has done a good job making sure that its forest industry provides opportunities for socio-economic development. Full utilization of the allocated volume would enhance aboriginal interests. The provincial government supports forest management to the full extent of the sustainable provincial annual allowable cut. Enhanced aboriginal forestry partnerships would move this indicator towards a 'Good' rating in the future.
Trend	Improving	Table 18 indicates that there is a trend towards further involvement in aboriginal forestry partnerships. The trend should continue into 2009 as the Saskatchewan forest industry restructures and rebuilds.
Information	Adequate	The information for this indicator can easily be compiled for the assessment.

Indicator # 19 Aboriginal Traditional Land-Use Knowledge

CCFM Element:
Aboriginal traditional land use and forest-based ecological knowledge

Provincial Value:
Protection of aboriginal traditional land use and forest-based ecological knowledge

Provincial Objective:
To incorporate aboriginal traditional land use and knowledge in planning

Introduction

Aboriginal Peoples in Canada have been mapping aspects of their cultures for several generations. Indians, Inuit, Métis, non-status Indians and others have called this mapping process by different names at various times and places – land-use and occupancy, land occupancy and use, traditional use, traditional land use and occupancy, current use, cultural sensitive areas and so on (Tobias, 2000). Saskatchewan has adopted the name traditional land use knowledge to address this information gathering process.

The International Earth Summit held in Rio de Janeiro in 1992 produced international agreements on basic principles for sustainability. It established specific requirements for assuring a more secure and sustainable future. The principles are enshrined in the Rio Declaration, and the requirements in Agenda 21. The recognition of the contribution of indigenous peoples and their knowledge was identified as being important to the successful quest for a sustainable future.

Agenda 21 focused the importance of indigenous knowledge in strategies for achieving sustainability objectives. In Saskatchewan, this focus coincided with the promotion of more holistic forest resource management perspectives and modern sustainable forest management techniques in both forest resource management and integrated land-use planning.

Today, the value of indigenous knowledge and traditional land-use knowledge is becoming recognized by scientists, managers and policy-makers, and is an evolving subject of national and international law (Anaya, 1996).

Overview of Indicator #19 Assessment		
State □ Fair	**Trend** ↑ Improving	**Information** ○ Partial

Measure:
19-1 Area and per cent of the commercial Provincial Forest covered by traditional land-use knowledge studies

Indicator Measure 1:

19-1 Area and per cent of the commercial Provincial Forest covered by traditional land-use knowledge studies

The development of traditional land use knowledge studies by aboriginal groups in Saskatchewan is a slow and cautious process. The integration of studies with environmental and economic-oriented integrated forest land-use and management plans has been a test for issues such as data ownership, security of information and misuse of information, particularly for spatial ceremonial, spiritual and medicinal information.

Today, 1,616,836 hectares –13 per cent of the 12,706,224 hectare Commercial Forest Zone of Saskatchewan – have been the subject of some level of traditional land-use knowledge studies. These are associated with the Pinehouse-Dipper Integrated Forest Land-Use Plan (IFLUP), the Missinipi strategy and the Fort a la Corne IFLUP. Additional traditional land-use knowledge studies are now being considered in conjunction with forest management planning.

Adequacy of Information for Indicator Measure 1:

- While formal scientific collection methods are available and used in the collection of traditional land use knowledge, the basis of knowledge is often anecdotal. Material is often culturally, spiritually and environmentally sensitive. Its spatial depiction is often restricted from general public distribution. However, when studies are completed and their compilation is made known, the results are valuable input into the development of options and strategies for both integrated forest land-use plans and forest management plans.

Indicator Summary and Forest Service Assessment: Indicator #19 Aboriginal Traditional Land Use Knowledge		
State	Fair	Thirteen per cent of the Commercial Forest Zone is covered at some level of traditional land use knowledge studies. These studies are associated with Ministry of Environment integrated forest land use plans.
Trend	Improving	Aboriginal groups are undertaking traditional land use knowledge projects over an additional 30 per cent of the Commercial Forest Zone. These future studies will provide indigenous knowledge valuable for the preparation of long-term land use, forest management and annual operating plans. The government advocates including full comprehensive knowledge in sustainable forest management planning processes; this leads to better plans and better resource management decisions.
Information	Partial	Traditional land use knowledge is not yet available for all areas in the Provincial Forest. Where it is available, it plays a key role in sustainable forest management planning processes. A

Indicator # 21 Rate of Compliance with Forest Management Laws and Regulation

CCFM Element:
Effective and Informed Decision Making

Provincial Value:
Information about and for forest management should be publicly available

Provincial Objective:
Ensure that the available information about and for forest management is current and available

Introduction

Decision makers try to involve the public in the process in order to effectively incorporate the full range of social values into decisions and to be responsive to changes in values over time. But decisions and commitments are effective only if they are put into practice. An assessment of compliance with laws and regulations is one way to confirm that decisions have been implemented. It is important that government agencies responsible for forest management increase transparency in forest management to the public, and continue to update or add to their forest management standards.

Overview of Indicator #21 Assessment		
State Good	**Trend** Improving	**Information** Adequate

Measures:

21-1 Forest contraventions in the last few years, relative to the size of the operations and rate of compliance

21-2 Independent sustainable forest management audit results

21-3 Per cent of the managed forest certified to voluntary sustainable forest management systems

Indicator Measure 1:

21-1 Forest contraventions in the last few years, relative to the size of the operations and rate of compliance

The following Table 20 summarizes the contraventions to The Forest Resources Management Act (FRMA) and The Forest Resources Management Regulations for the fiscal years spanning 2001/2002 to 2007/2008.

All contraventions are the result of administrative penalties issued under Section 78 of The Forest Resources Management Act, and have been confirmed or gone unappealed by the violator. Penalties that are under dispute or appeal have been omitted from this report, pending their resolution.

The type of licence is also described to relate the scope of the operation to the offence. Forest Products Permits (FPPs) are annual, non-renewing licences and are used by most small to mid-sized operators. Volume-based term supply licences (VTSL) are used by small to medium operations. This licence is generally valid for up to a five-year term. Area-based term supply licences (ATSL) are medium sized operations and are also generally valid for up to a five-year term, but terms of up to 10 years are possible. Forest management agreements (FMAs) are reserved for major, large-scale operations and have a 20-year term.

Table 20: Administrative Penalties Summary

2001/2002	# of Penalties	Total Penalty Amount	Types of Violations
All Permit Holders	21	$39,219.78	• Fail to remove forest products by specified time (5) • Over cut (4) • Trespass (7) • Fail to pay dues or fees by specified time (4) • Fail to follow utiiization standard (1)
All FMA Holders	8	$9,586.22	• Fail to follow utilization standard (5) • Fail to follow harvesting methods & standards in approved operating plan (2) • Trespass (1)

2002/2003	# of Penalties	Total Penalty Amount	Types of Violations
Permit Holders	4	$5,149.70	• Fail to remove forest products by specified time (2) • Over cut (1) • Fail to follow utilization standard (1)
Area Based TSL Holders	0	0	
FMA Holders	4	$3,500.00	• Trespass (1) • Fail to follow utilization standard (2) • Fail to follow harvesting methods & standards in approved operating plan (1)

2003/2004	# of Penalties	Total Penalty Amount	Types of Violations
Permit Holders	9	$6,416.57	• Fail to remove forest products by specified time (2) • Trespass (3) • Fail to pay dues or fees by specified time (2) • Fail to follow harvesting methods & standards in approved operating plan (2)
Area Based TSL Holders	0	0	
FMA Holders	0	0	

2004/2005	# of Penalties	Total Penalty Amount	Types of Violations
Permit Holders	4	$2,238.78	• Fail to remove forest products by specified time (1) • Overcut (1) • Fail to pay dues or fees by specified time (2)
Volume Based TSL Holders	0		
Area Based TSL Holders	3	$2,500.00	• Fail to follow utilization standard (1) • Fail to follow harvesting methods & standards in approved operating plan (2)
FMA Holders	4	$2,285.00	• Trespass (1) • Fail to follow utilization standard (1) • Fail to follow harvesting methods & standards in approved operating plan (2)

2005/2006	# of Penalties	Total Penalty Amount	Types of Violations
Permit Holders	2	$800.00	• Trespass (1) • Fail to follow harvesting methods & standards in approved operating plan (1)
Volume Based TSL Holders	0	0	
Area Based TSL Holders	9	$7,561.97	• Fail to remove forest products by specified time (1) • Trespass (4) • Fail to follow harvesting methods & standards in approved operating plan (4)
FMA Holders	19	$32,819.94	• Fail to remove forest products by specified time (1) • Trespass (4) • Fail to follow harvesting methods & standards in approved operating plan (13) • Failure to follow terms of licence (1)

2006/2007	# of Penalties	Total Penalty Amount	Types of Violations
Permit Holders	3	$2,700.00	• Fail to follow harvesting methods & standards in approved operating plan (3)
Volume Based TSL Holders	0	0	
Area Based TSL Holders	3	$6,000.00	• Fail to follow utilization standard (2) • Fail to follow harvesting methods & standards in approved operating plan (1)
FMA Holders	3	$4,794.40	• Trespass (1) • Fail to follow harvesting methods & standards in approved operating plan (2)

2007/2008	# of Penalties	Total Penalty Amount	Types of Violations
Permit Holders	5	$879.54	• Fail to pay dues or fees by specified time (3) • Trespass (1) • Scaling contrary to plan (1)
Volume Based TSL Holders	2	$1,548.94	• Trespass (1) • Unauthorized camp location (1)
Area Based TSL Holders	1	$2,810.66	• Trespass (1)
FMA Holders	1	$500.00	• Fail to remove forest products by specified time (1)

It is important to note that forest companies holding FMAs have been assigned to manage up to 78 per cent of the provincial approved allowable cut and have received only 37 per cent of the administrative penalties over the last seven years. Forest Products Permits holders have received 46 per cent of the administrative penalties. Area-based TSL holders received 15 per cent of administrative penalties, while those operating under volume-based TSLs received 2 per cent of the total number.

Although total forest harvesting inspections in the province, as seen in Table 21, have fluctuated slightly from a low of 498 in 2007/2008 and a high of 921 in 2003/2004, there does not seem to be a correlation between inspection intensity and the issuance of administrative penalties. There is no real trend in administrative penalties over the last few years. A focused inspection program in 2005/06, coupled with wet weather conditions, resulted in a significant number of administrative penalties being administered that year.

Table 21: Number of Ministry of Environment Forest Harvesting Inspections (includes Provincial Forest, Crown Agriculture Lands and Parks)	
Operating Year	**# of inspections conducted**
1999/2000	709
2000/2001	692
2001/2002	656
2002/2003	718
2003/2004	921
2004/2005	662
2005/2006	839
2006/2007	701
2007/2008	498

Field inspections recognize other potential contraventions such as poor ratings on inspected items and notices of violation, which don't necessarily become administrative penalties. From the 498 forest harvesting inspections conducted within the province in 2007/2008, 3,177 individual items were inspected, where 2,984 items inspected were in compliance, resulting in a 93.9% provincial compliance rate for forest operations.

Adequacy of Information for Indicator Measure 1:

- Administrative penalties dating back to 1999 were not collated for this indicator for a greater comparison of trends.
- Forestry enforcement reports for 2001/2002 and 2002/2003 have been available on the Saskatchewan Ministry of Environment website, however reports have not been released for the 2003/2004 to 2007/2008 operating years.

Indicator Measure 2:

21-2 Independent sustainable forest management audits results

The Ministry of Environment's independent sustainable forest management audit process is intended to facilitate continuous improvement of the practice of forestry in Saskatchewan. The Forest Resources Management Regulations require a periodic independent sustainable forest management audit to be conducted for each forest management agreement holder. The audit assesses how well the licensee has implemented the objectives of their forest management plan, their compliance with terms of the forest management agreement, The Forest Resources Management Act and regulations, as well as compliance with any ministerial approval issued under the authority of The Environmental Assessment Act.

Table 22 summarizes the independent audit status to date by forest management agreement.

Table 22: Independent Audit Status				
	Mistik FMA	**Weyerhaeuser PP FMA**	**Weyerhaeuser PA FMA**	**L&M FMA**
FMP Approval Date	May 13, 1997	May 13, 1999	January 26, 2001	November 18, 1999
Audit Scope Time Period	April 1, 1998 to March 31, 2004	April 1, 1999 to March 31, 2005	April 1, 2000 to March 31, 2006	April 1, 2001 to March 31, 2007
Audit Plan Approval	March 17, 2004	December 20, 2005	February 28, 2006	December 27, 2007
On-site auditor days	15	15	20	8
Auditing Firm	KPMG LLP	KPMG LLP	KPMG LLP	KPMG LLP
Audit Date	July 12-16, 2004	June 12-16, 2006	September 11-15, 2006	June 2008
Audit Report Date	January 2005	September 2006	February 2007	October 2008
Coordinated Action Plan Date (MOE & Licensee)	September 2005	January 2007	April 2007	Planned January 2009
Ministers Report Date	November 2005	February 2007	Drafted July 2007	TBD
News Release Date	December 12, 2005	June 7, 2007	TBD	TBD
# of Major nonconformities	3	0	0	2
# of minor nonconformities	7	4	4	13
# of opportunities for improvement	16	21	16	14

Full details of the audit and findings are made available on-line at www.environment.gov.sk.ca/programs-services/ under the 'Forests' heading.

In brief, the audits indicate that overall forest management within the forest management agreement areas is satisfactory. Some of the auditors' general comments include:

- Two forest management plans were considered weak and the others more robust.
- The ministry's practice of placing approval conditions for FMPs is a weak approval process.
- There were pervasive operational non-compliance issues for one forest company.
- There were minor isolated instances of operations non-compliance for the other company.
- All companies promptly carried out renewal.
- Public involvement commitments were carried out well by the companies.
- Areas of improvement were identified for all aspects of forest management
- Both the companies and the government are open to making improvements based on the audit findings.

Adequacy of Information for Indicator Measure 2:

- There is no comprehensive independent forest management audit protocol, required to be conducted on area-based and volume-based term supply licence holders.

Indicator Measure 3:

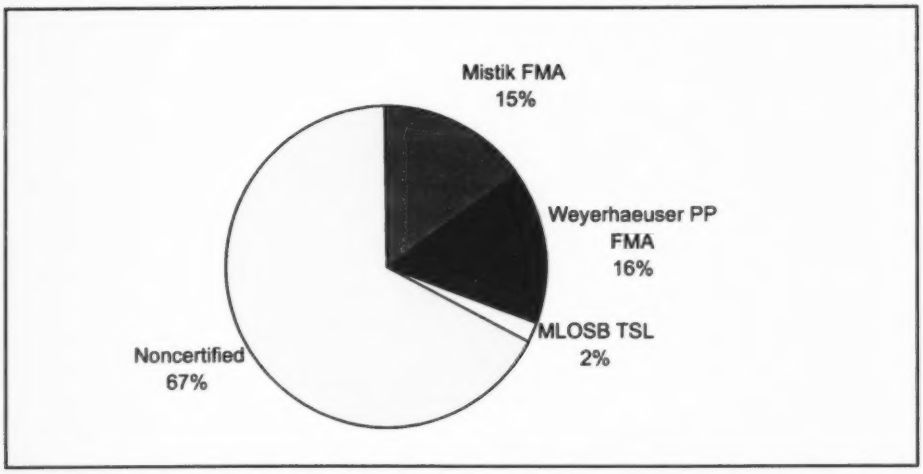
21-1 Per cent of the managed forest certified to voluntary sustainable forest management systems

Forest certification is a voluntary tool available to forestry organizations who want to demonstrate corporate responsibility by having their forest management planning and practices independently certified. Certification standards go beyond regulatory requirements, taking into considering environmental, economic and social values.
In Canada, there are three sustainable forest management certification standards in use:

- Canadian Standards Association (CAN CSA/Z809)
- Forest Stewardship Council (FSC)
- Sustainable Forestry Initiative® Program (SFI)

In addition to these standards specific to forest management, the ISO 14001 environmental management system standard (ISO) is also used. ISO is an internationally recognized generic standard, applicable to all industry sectors, used to manage an organization's impact on the environment. Each Saskatchewan forest company mentioned below in Figure 16, including the Ministry of Environment's forestry program, maintains certification to the ISO 14001 standard for their operations. So far, CSA has been the standard of choice for Saskatchewan forest companies to demonstrate sustainable forest management practices.
Source: Canadian Sustainable Forestry Certification Coalition

Figure 14: Proportion of the Commercial Forest that is Certified to a Sustainable Forest Management Standard



Note: The PA FMA was certified to the CSA standard from 2002 to 2007 when operations were still active

The Canadian Standards Association sustainable forest management standard (CSA SFM) requirements are specific and cover three key and interrelated areas: public participation, performance, and systems to achieve the desired results. CSA SFM certified companies are required to establish a public advisory committee, develop a SFM plan that is available to the public, and produce an annual report on performance. Certified companies also make public their voluntary certification and surveillance audit reports.

Mistik Management Ltd. achieved certification of its FMA area to the Forest Stewardship Council – Canada's National Boreal standard on November 16, 2007. This FSC certification is a first of its kind in Saskatchewan. The FSC standard addresses the following 10 principles:

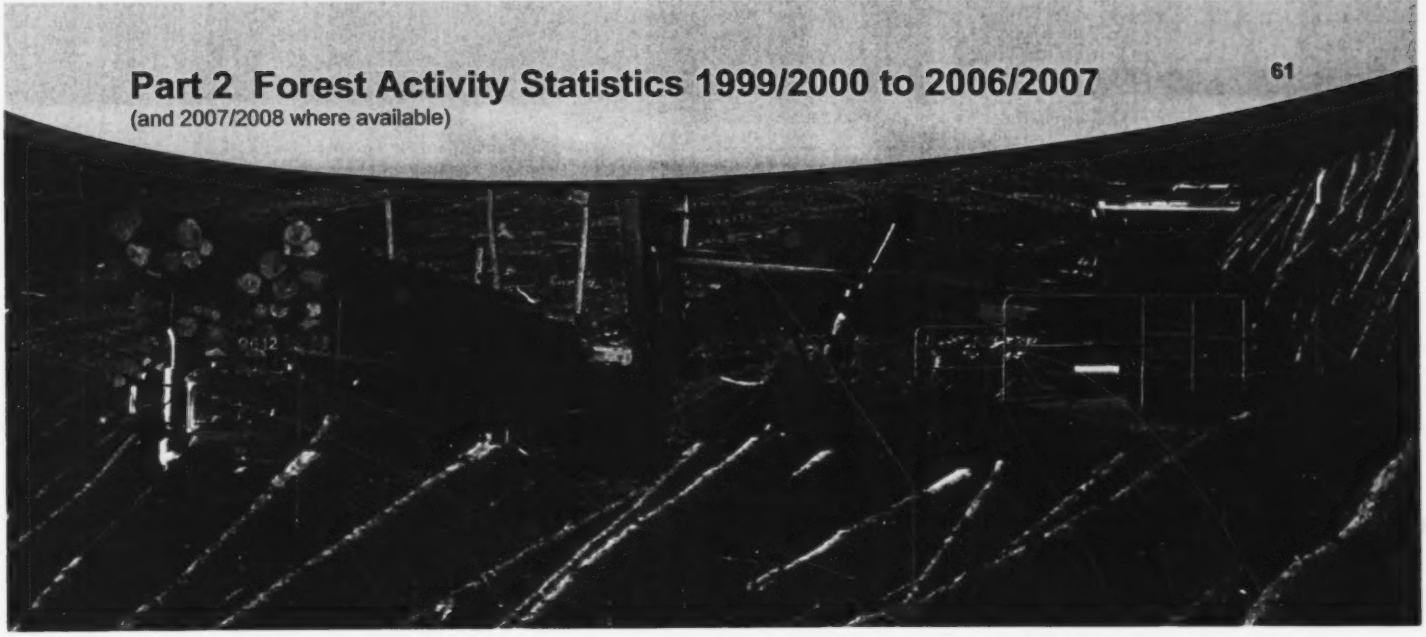
- compliance with laws and FSC principles;
- tenure and use rights and responsibilities;
- indigenous people's rights;
- community relations and workers rights;
- benefits from the forest;
- environmental impact;
- management planning;
- monitoring and assessment;
- high conservation value forests; and
- plantations

If a government audit or inspection raises concerns about a forest company, all three sustainable forest management standards require that adaptive management and continual improvement mechanisms are in place to address any shortcomings.

Adequacy of Information for Indicator Measure 3:

- The certification status is based on a January 31, 2008 report by the Canadian Sustainable Forestry Certification Coalition, which can be found online at: www.certificationcanada.org

Indicator Summary and Forest Service Assessment: Indicator #21 Rate of Compliance with Forest Management Laws & Regulations	
State Good	The current state of the indicator as it relates to effective and informed decision making is considered to be good where typically the provincial forest operations compliance rate is over 90 per cent. Transparent checks and balances are being implemented as a result of agency regulation and by voluntary certification. Both major industry and government have systems in place for continual improvement following independent audits. Although 67 per cent of the Commercial Forest Zone is not certified, regular forestry enforcement inspections take place on these areas. Even with voluntary certification, non-compliance events do occur but mechanisms are in place to report these and to mitigate any damage caused. The government forestry compliance program falls within the Forest Service certified environmental management system. The branch regularly implements changes to enhance the compliance program, based on internal and external audit findings. These audits help identify both strengths and weaknesses with the government forestry compliance program.
Trend Improving	There are adequate checks and balances on long-term licence holders, who manage 78% of the approved annual cut; the public is continually informed and involved in management planning and assessments associated with these operations. The degree of certification differs substantially among licence types, due in large measure to differences in incentives for certification and in associated costs. With the exception of the MLOSB TSL area, short-term forest products permit holders and volume- and area based term supply licensees are not certified to sustainable forest management standards. Collectively, these short-term licence holders are more likely to have non-compliance issues than the larger long-term licence holders. The forest industry has asked the Forest Service Branch to conduct forestry compliance workshops jointly with the industry. The intent of the workshops is to enhance communication between industry staff and government forestry officers.
Information Adequate	There is a good system in place for independent audits to evaluate the effectiveness of decisions and commitments. There are sufficient systems and processes in place for forestry inspections and enforcement by government to confirm implementation of proper forest practices. Although there is no comprehensive assessment of forest management practices for non-FMA area-based licensees, ongoing forestry inspections do take place and provide a sense of the implementation practices. Although the government can improve its reporting of contraventions to the public, independent audit results are shared and the public is informed about companies' forest management progress.



Timber Allocation Statistics

Annual Allowable Cut Regulated by Forest Management Agreement				
FMA	**Operations**	**Allocation Term**	**Wood Type**	**Volume (m^3)**
Prince Albert FMA	Weyerhaeuser Company	2000-2010	Softwood	1,831,000
	Weyerhaeuser Company	2000-2010	Hardwood	936,000
	Third Party Allocation	2000-2010	Softwood	99,000
	Third Party Allocation	2000-2010	Hardwood	12,000
Total			**Softwood**	**1,930,000**
Total			**Hardwood**	**948,000**
Total PA FMA				**2,878,000**
Weyerhaeuser Pasquia-Porcupine FMA	Weyerhaeuser Company	1999-2018	Softwood	486,800
	Weyerhaeuser Company	2004-2008	Hardwood	911,205
	Third Party Allocation	1999-2018	Softwood	25,700
	Third Party Allocation	2004-2008	Hardwood	50,000
Total			**Softwood**	**512,500**
Total			**Hardwood**	**961,205**
Total PP FMA				**1,473,705**
Mistik FMA	Mistik Management Ltd.	2002-2007*	Softwood	578,000
	Mistik Management Ltd.	2002-2007*	Hardwood	798,690
	Third Party Allocation	2002-2007*	Softwood	24,000
	Third Party Allocation	2002-2007*	Hardwood	6,000
Total			**Softwood**	**602,000**
Total			**Hardwood**	**804,690**
Total Mistik FMA				**1,406,690**
L&M FMA	L&M Wood Products (1985) Ltd	2003-2017	Softwood	125,100
	L&M Wood Products (1985) Ltd	2003-2017	Hardwood	42,620
	Third Party Allocation	2003-2017	Softwood	1,000
	Third Party Allocation	2003-2017	Hardwood	2,000
Total			**Softwood**	**126,100**
Total			**Hardwood**	**44,620**
Total L&M FMA				**170,720**
Provincial FMA Total		**2007**	**Softwood**	**3,170,600**
Provincial FMA Total		**2007**	**Hardwood**	**2,758,515**
Provincial FMA Grand Total		**2007**	**Total**	**5,929,115**

* When the new Mistik FMA forest management plan is approved, the AAC volume and allocation term will be adjusted.
Data Source: FMA Agreements, Agreement Amendments or Authorization Letter

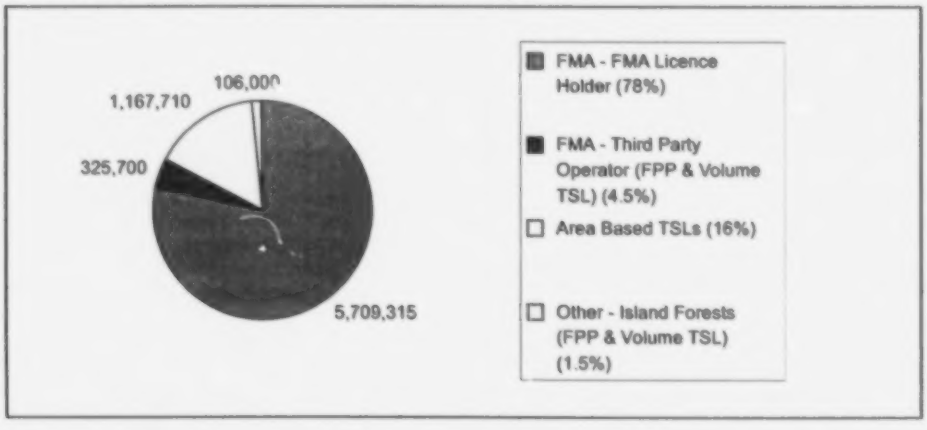
Approved Annual Cut for Area Based Term Supply Licences*			
Operating Year	**Hardwood (m^3)**	**Softwood (m^3)**	**Area Based TSL Volumes Total (m^3)**
1999/00	-	-	-
2000/01	-	-	-
2001/02	-	-	-
2002/03	100,400	251,000	351,400
2003/04	232,400	472,000	704,400
2004/05	287,400	629,000	916,400
2005/06	287,400	629,000	916,400
2006/07	287,400	629,000	916,400
2007/08	447,710	720,000	1,167,710

*North West Communities Wood Products Ltd TSL (Started 2002)
Kitsaki-Zelensky Partnership TSL– La Ronge First Nations (Started 2003)
Mee-Toos Forest Products Ltd. TSL (Started 2005)
Meadow Lake OSB TSL (Started 2007)

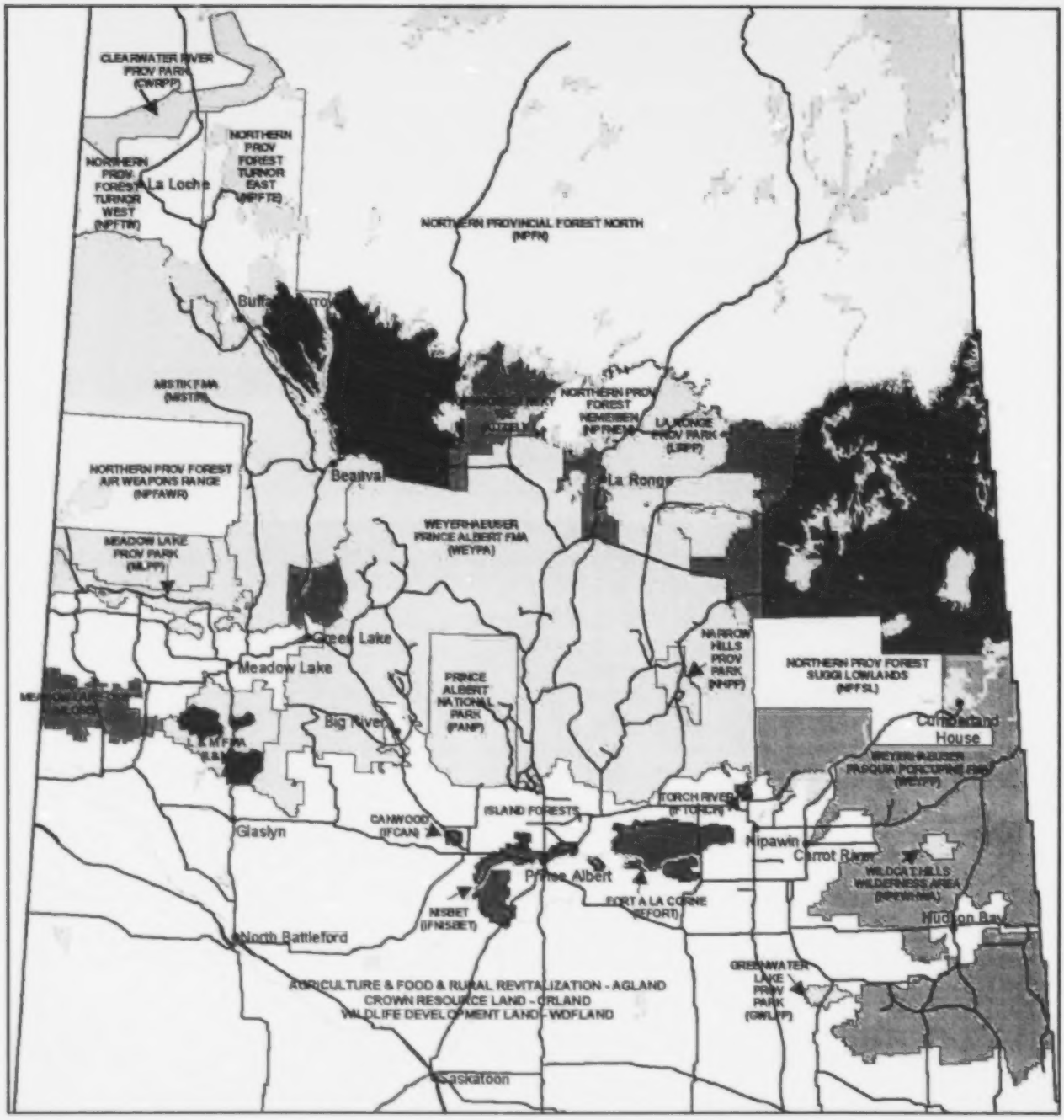
Approved Annual Cut for the Island Forests			
Operating Year	**Hardwood (m^3)**	**Softwood (m^3)**	**Island Forests Volumes Total (m^3)**
1999/00	10,000	50,000	60,000
2000/01	10,000	50,000	60,000
2001/02	10,000	50,000	60,000
2002/03	10,000	50,000	60,000
2003/04	10,000	50,000	60,000
2004/05	10,000	54,000	64,000
2005/06	10,000	90,000*	100,000
2006/07	10,000	90,000	100,000
2007/08	26,000	80,000	106,000

*Recalculated wood supply shows more softwood volume available than previously allocated

Timber Allocation in cubic meters by Licence Type


106,000
1,167,710
325,700
5,709,315
FMA - FMA Licence Holder (78%)
FMA - Third Party Operator (FPP & Volume TSL) (4.5%)
Area Based TSLs (16%)
Other - Island Forests (FPP & Volume TSL) (1.5%)

Saskatchewan Crown Forest Areas



Legend
Towns Roads Waterbodies

N

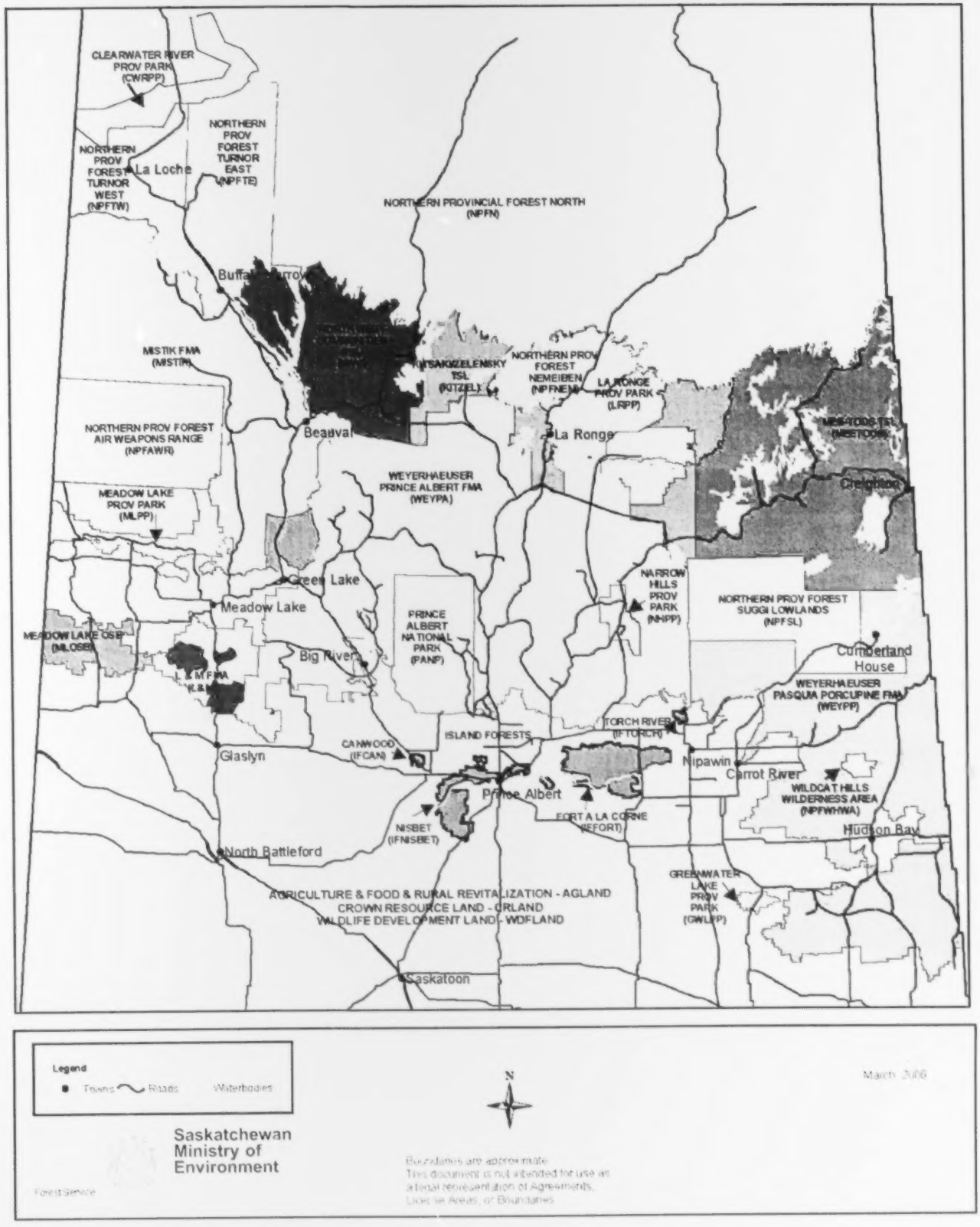
March, 2006

Saskatchewan Ministry of Environment

Forest Service

Boundaries are approximate.
This document is not intended for use as a legal representation of Agreements, License Areas, or Boundaries.

Saskatchewan Crown Forest Areas



Managed Lands Detailed Statistics

Mistik FMA - Mistik Management Ltd. Operations Only

Year Licence Issued: April 24, 1998 transferred to Mistik Management Ltd.
Year of Current Approved FMP: May 13, 1997
Current Gross Area of FMA: 1,926,367 ha

Note: "Mistik Core" excludes activities that took place in the Turner Forest Areas, which are no longer part of the Mistik FMA
Note: Does not include third party harvest or Weyerhaeuser silviculture activities on third party blocks

	1999/2000 (Mistik Core only)	2000/2001 (Mistik Core only)	2001/2002 (Mistik Core only)	2002/2003	2003/2004	2004/2005	2005/2006	2006/2007
Harvested Softwood Volume m^3	403,502	465,841	463,472	394,054	384,380	359,586	324,940	563,234
Harvested Hardwood Volume m^3	676,734	666,788	584,703	745,347	709,126	679,727	685,612	786,593
Total Company Harvest m^3	1,022,991	1,132,629	1,048,175	1,139,401	1,093,506	1,039,313	1,010,552	1,349,827
Company Harvested Area (ha)	6,631	7,729	6,470	7,923	6,461	7,313	7,308	5,873
Company Salvage (fire & blowdown) % of total volume	5.4	0	0	0	4.6	0	0	12.8
Number of Trees Planted	5,103,910	4,192,664	3,983,695	3,312,075	2,488,924	5,870,884	5,024,465	5,243,947
Hectares Planted	3,891	3,598	3,615	3,520	3,624	5,276	5,168	4,404
Site Preparation & Natural Assisted Regeneration (ha)	754	793	1,268	640	672	1,143	525	685
Stand Tending (ha)	0	0	0	0	0	0	0	0
Regeneration Assessment Surveyed Area (ha)	1,702	12,926	8,566	3,819	8,141	4,515	9,023	5,789

Data Source: 1999/00 to 2003/04 harvest volumes are from the Mistik operating plan summary of completed activities; 2004/05 – 2006/07 are finalized per reconcile/audit process; all other data is from forest company annual operating plan reports of completed activities

L & M FMA _ - L & M Company Operations Only

Year Licence Issued: March 7, 1987
Year of Current Approved FMP: November 18, 1999
Gross Area of FMA: 72,576 ha

Note: Does not include third party harvest or Weyerhaeuser silviculture activities on third party blocks

	1999/2000	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	2005/2006	2006/2007
Harvested Softwood Volume m^3	115,603	95,277	66,755	104,930	60,480	85,796	90,485	106,185
Harvested Hardwood Volume m^3	41,835	32,664	27,998	30,655	54,778	39,553	43,807	30,554
Total Company Harvest m^3	157,437	127,941	94,753	135,585	115,259	125,349	134,292	136,739
Company Harvested Area (ha)	673.3	490	427.3	647	713.9	702.1	861.3	698.1
Company Salvage (fire & blowdown) % of total volume	0	0	0	0	0	0	0	0
Number of Trees Planted	61,560	57,765	118,045	136,800	134,100	30,000	52,400	NA
Hectares Planted (ha)	NA	NA	102.7	92.2	147.8	15.8	48.6	27.2
Site Preparation & Natural Assisted Regeneration (ha))	278	493	377.9	120.2	197.7	346.2	576.9	309.8
Stand Tending (ha)	60.8	40	0	9.4	0	24.6	99.1	37.2
Regeneration Assessment Surveyed Area (ha)	0	0	985.3	666	540.3	1095.4	454.4	1921.4

Data Source: 1999/00 to 2002/03 and 2004/05 and 2005/6 harvest volumes are from the Forest Service finalized volumes per reconcile/audit/year; 2003/04 and 2006/07 are not finalized, but may be in reconcile/audit process; all other data is from forest company annual operating plan reports of completed activities or Table 1 of the L&M Independent Sustainable Forest Management Audit Plan Dec 2007.

Prince Albert FMA – Weyerhaeuser Saskatchewan Ltd. Operations Only

Year Licence Issued: September 9, 1986
Year of Current Approved FMP: January 26, 2001
Gross Area of FMA: 3,315,231 ha

Note: Does not include third party harvest or Weyerhaeuser silviculture activities on third party blocks

	1999/2000	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	2005/2006	2006/2007
Harvested Softwood Volume m^3	573,121	925,264	787,017	1,040,851	1,194,046	1,353,959	1,041,893	46,489
Harvested Hardwood Volume m^3	536,179	476,998	569,578	659,862	658,747	970,641	899,658	29,045
Total Company Harvest m^3	1,109,300	1,402,263	1,356,595	1,700,713	1,852,793	2,324,601	1,941,551	75,533
Company Harvested Area (ha)	7,185	9,465	8,086.5	10,358.7	10,879.4	13,567.6	8409.3	446.1
Company Salvage (fire & blowdown) % of total volume	0	0	0	0	14	0.3	0	0
Number of Trees Planted	5,753,850	4,013,171	3,562,198	4,331,985	5,909,379	6,634,132	5,718,136	8,530,053
Hectares Planted (ha)	3,350	2,597	2,455	2,651	4,000.7	5,132	4,760.6	7,466.3
Site Preparation & Natural Assisted Regeneration (ha)	3,530	6,114	6,897	5,182	6,099	5,211	7,330	5935.9
Stand Tending (ha)	1,235	1,493.5	1,120.8	2,512.5	649.8	685.8	492.4	0
Regeneration Assessment Surveyed Area (ha)	7,972	6,729	2,049.6	8,774	5,347	2,880	0	32,454

Data Source: 1999/00 to 2004/05 harvest volumes are from the Forest Service finalized volumes per reconcile/audit/year; 2005/06 and 2006/07 are not finalized, my be in reconcile/audit process; all other data is from forest company annual operating plan reports of completed activities

Pasquia-Porcupine FMA – Weyerhaeuser Saskatchewan Ltd. Operations Only

Year Licence Issued: May 14, 1999
Year of Current Approved FMP: May 13, 1999
Gross Area of FMA: 1,998,086 ha

Note: Does not include third party harvest or Weyerhaeuser silviculture activities on third party blocks

	1999/2000	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	2005/2006	2006/2007
Harvested Softwood Volume m^3	508,674	407,330	482,250	391,508	432,809	520,784	442,744	132,439
Harvested Hardwood Volume m^3	387,277	459,745	433,742	527,436	692,336	687,981	793,653	630,043
Total Company Harvest m^3	895,951	867,075	915,992	918,944	1,125,145	1,208,765	1,236,392	762,482
Company Harvested Area (ha)	5,161.33	5,166.58	5,635.2	5,712.1	6,711.8	6,843.3	6,917.7	4,021.1
Company Salvage (fire & blowdown) % of total Volume	0	0	2.3	3.3	3.8	0	0	0
Number of Trees Planted	3,013,935	3,478,615	3,416,958	4,075,730	2,968,473	2,564,414	3,436,450	4,495,393
Hectares Planted (ha)	2,312	2,700	3,068	3,453.1	2,628	2,330.3	3,267.4	4,294.8
Site Preparation & Natural Assisted Regeneration (ha)	476	632	1,549.6	362.1	904	116.4	87.1	201.6
Stand Tending (ha)	157	137	94.8	208	0	0	0	128.7
Regeneration Assessment Surveyed Area (ha)	2,603.2	2,910.7	215	1,585	0	3,162.8	0	34,591.1

Data Source: 1999/00 to 2004/05 harvest volumes are from the Forest Service finalized volumes per reconcile/audit/year closed 2005/06 and 2006/07 are not finalized, my be in reconcile/audit process; all other data is from forest company annual operating plan reports of completed activities

Meadow Lake OSB Area Based TSL Forest Area - Meadow Lake OSB Operations

Year of assignment: Area TSL assigned November 2007
Year of Current Approved FMP: NA
Gross Area of Lands: 238,540 ha

Note: Does not include third party harvest or Weyerhaeuser silviculture activities on third party blocks

	From 1999/2000 to 2002/2003 Operating years forest management was under the Mistik FMA (Statistics for Bronson & Green Lake are provided here)	2003/2004	2004/2005	2005/2006	2006/2007
Harvested Softwood Volume m^3	NA	12,839	1,881	3,628	51
Harvested Hardwood Volume m^3	NA	58,980	33,066	63,066	88,823
Total Company Harvest m^3	Roughly 218,000 m3	71,816	34,947	66,802	88,875
Company Harvested Area (ha)	1,605	795.6	563	993	918
Company Salvage (fire & blowdown) % total Volume	0	0	0	0	0
Number of Trees Planted	1,080,095	0	0	291,330	0
Hectares Planted (ha)	1048	0	0	288	0
Site Preparation & Natural Assisted Regeneration (ha)	0	0	0	0	0
Stand Tending (ha)	0	0	0	0	0
Regeneration Assessment Surveyed Area (ha)	1941	0	0	0	0

Data Source: all harvest volumes are finalized volumes per reconcile/audit/year; all other data is from forest company annual operating plan reporting of completed activities

Island Forests – Ministry of Environment Managed Lands

Year Licence Issued: Annual Forest Products Permits to Independent Operators & First Nations Island Forests Management Inc. Volume-based Term Supply Licence (Sept 2004 – March 2007)

Year of Current Approved FMP: None Apply

Gross Area of Island Forests: 225,878 ha

Note: The ministry has a forestry agreement with the Saskatchewan Forest Centre (SFC) "ForestFirst" to manage a harvesting operating plan and the renewal activities on behalf of the government within the Island Forests as commenced in 2003.

	1999/2000	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	2005/2006	2006/2007
Harvested Softwood Volume m^3	76,609	60,471	46,740	73,444	77,035	52,765	97,655	69,219
Harvested Hardwood Volume m^3	31,773	8,858	15,136	9,600	4,819	3,200	4,425	2,522
Total Harvest	108,382	69,329	61,876	83,044	81,854	55,965	102,080	71,741
Harvested Area (Hha)	953	576	507	717	736	430	785	509
Salvage (fire & blowdown) % total Volume	48	25	22	41	56	0	0	0
Number of Trees Planted by SFC	See Ministry of Environment Renewal Statistics				200,000	0	482,800	679,956
Hectares Planted by SFC (ha)					101	0	296	531
Site Preparation & Natural Assisted Regeneration by SFC (ha)					386	0	293	569
Stand Tending by SFC (ha)					0	0	0	0
Regeneration Assessment Surveyed Area (ha) by SFC					0	1,000	39,637	0

Data Source: Ministry of Environment, Forest Service

Mee-Toos Forest Area

Year Licence Issued: Area-based TSL issued February 4, 2005
Year of Current Approved FMP: NA
Gross Area of FMA: 1,672,211 ha

Note: Includes all third party harvest statistics

	1999/2000	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	2005/2006	2006/2007
Harvested Softwood Volume m^3	76,100	26,900	30,700	30,500	15,000	73,000	37,700	36,700
Harvested Hardwood Volume m^3	9,200	400	1,000	900	255	5,600	575	475
Total Company Harvest m^3	85,300	27,300	31,700	31,400	15,255	78,600	38,275	37,175
Company Harvested Area (ha)	391	146	125	350	203	600	269	325
Company Salvage (fire & blowdown) % of total Volume	0	0	0	0	0	0	0	0
Number of Trees Planted	793,000	438,721	0	2,000	0	0	0	0
Hectares Planted (ha)	480	890	0	1.5	0	0	0	0
Site Preparation & Natural Assisted Regeneration (ha)	480	210	125	0	176	120	270	697
Stand Tending (ha)	0	0	0	0	0	0	0	0
Regeneration Assessment Surveyed Area (ha)	0	0	0	0	0	347	210	297

Data Source: Harvest volumes and areas are from the Forest Service area forester cutover summaries; all other information is from various sources at the Forest Service and Mee-Toos Forest Products Ltd.

Kitsaki-Zelensky Forest Area

Year Licence Issued: Area-based TSL issued May 14, 1999
Year of Current Approved FMP: NA
Gross Area of FMA: 595,553 ha

Note: Includes all third party harvest statistics

	1999/2000	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	2005/2006	2006/2007
Harvested Softwood Volume m^3	53,682	60,899	25,108	18,061	18,061	11,854	44,244	10,383
Harvested Hardwood Volume m^3	0	0	1,604	1,645	5,359	1,432	30,524	26,710
Total Company Harvest m^3	53,682	60,899	50,966	26,753	23,420	13,286	74,768	37,093
Company Harvested Area (ha)	538	760	397	284	216	186	470	225
Company Salvage (fire & blowdown) % of total Volume	6%	0	0	0	0	0	0	0
Number of Trees Planted	0	268,370	452,470	841,279	404,100	233,919	140,108	0
Hectares Planted (ha)	0	168	283	526	253	146	94	0
Site Preparation & Natural Assisted Regeneration (ha)	0	0	0	0	0	0	0	0
Stand Tending (ha)	0	0	0	0	0	0	0	0
Regeneration Assessment Surveyed Area (ha)	0	0	0	0	0	0	0	0

Data Source: Harvest volumes and areas are from the Forest Service area forester cutover summaries, all other information are from various sources at the Forest Service and Kitsaki-Zelensky Partnership

Note:
Forest Area Statistics for the North West Community TSL Forest Area will be reported on in the next report

Managed Lands Detailed Statistics

Area-based Term Supply Licence Harvesting Statistics Summary						
Year	# of Area-Based TSLs In Place	Area TSL Licence Holder	*Softwood Harvested Volume m3	*Hardwood Harvested Volume m3	*Total Harvested Volume m3	Estimated Harvested Area (ha)
1999/00	0	0	0	0	0	0
2000/01	0	0	0	0	0	0
2001/02	0	0	0	0	0	0
2002/03	1	Mee-Toos	0	0	0	0
2003/04	2	NWC	2,704	0	2,704	16
		Mee-Toos	0	0		0
2004/05	3	NWC	3,846	14,116	28,298	109
		Kitsaki-Zelensky	10,336	0		63
		Mee-Toos	0	0		0
2005/06	3	NWC	18,000	211	47,268	110
		Kitsaki-Zelensky	29,057	0		176
		Mee-Toos	0	0		0
2006/2007	3	NWC	21,323	0	87,774	129
		Kitsaki-Zelensky	10,383	26,710		225
		Mee-Toos	28,677	681		178

*as reported on Revenue and Wood flow reports; these volumes are not yet verified; volumes are before final reconciliation process
Source: Ministry of Environment, Forest Service

Third Party Harvesting Statistics

(Third party harvesting refers to volumes reserved within Forest Areas for independent operators to harvest under forest product permits or volume based term supply licences.)

Detailed breakdown of FPP Harvesting for 2005/2006				
Year	*# FPP Returned for Green tree harvesting	FPP Green tree harvested volumes m^3	*# FPP Salvage Logging Returned	FPP Salvage harvested volumes m^3
1999/00	167	541,022**	50	120,261
2000/01	106	312,388**	24	54,084
2001/02	116	268,966**	19	36,843
2002/03	122	236,319**	54	107,828
2003/04	115	175,091**	47	79,456
2004/05	85	236,646	27	53,697

*does not include permits for landscape trees and Christmas trees
**includes timber harvested volumes from provincial parks, which are not designated Provincial Forests

Detailed breakdown of FPP Harvesting for 2005/2006				
Commercial Forest Areas	2005/2006 Total # of Permit Returns	2005/2006 Total FPP Harvested Volumes (m^3)	2005/2006 Estimated Harvest Area (ha)	2005/2006 Salvage as % of the Total Harvest Volume
Mistik FMA	15	124,643	755	0
L&M FMA	2	1,143	7	0
Meadow Lake OSB Lands	2	292	2	0
North West Communities TSL	0	0	0	0
Kitsaki-Zelensky TSL	4	5,249	32	0
Turner East Supply Area	0	0	0	0
Turner West Supply Area	0	0	0	0
Weyerhaeuser PA FMA	16	40,273	244	2
Island Forests	24	83,090	504	6
Mee-Toos TSL	3	32,054	194	0
Weyerhaeuser PP FMA	14	14,281	87	21
Unmanaged Provincial Forest (Suggi Lowlands, Nemeiben, and Northern Prov Forest)	10	13,101	79	2
Total	87	314,125	1,904	2.8

Data Source: Ministry of Environment, Forest Service

Detailed breakdown of FPP Harvesting for 2006/2007				
Commercial Forest Areas	2006/2007 Total of Permits Returns	2006/2007 FPP Harvested Volumes (m^3)	2006/2007 Estimated Harvest Area (ha)	2006/2007 Salvage as % of Total Harvest Volume
Mistik FMA	8	5,931	36	3
L&M FMA	0	0	0	0
Meadow Lake OSB Lands	2	300	2	0
North West Communities TSL	0	0	0	0
Kitsaki-Zelensky TSL	2	3,650	22	98
Turner East Supply Area	0	0	0	0
Turner West Supply Area	0	0	0	0
Weyerhaeuser PA FMA	21	564,835	3,423	1
Island Forests	20	72,107	437	1
Mee-Toos TSL	1	179	1	15
Weyerhaeuser PP FMA	14	12,444	75	0
Unmanaged Provincial Forest (Suggi Lowlands, Nemeiben, and Northern Prov Forest)	7	5,875	36	0
Total	74	665,320	4,032	1.3

Data Source: Ministry of Environment, Forest Service

Volume-based Term Supply Licence Harvesting Statistics (does not include provincial parks)						
Forest Area	Years	# of Volume Based TSLs In Place	Softwood Harvested Volume m3	Hardwood Harvested Volume m3	Total Harvested Volume m3	Estimated Harvested Area (ha)
PA FMA	2004/05	7	14,423	132	14,555	88
	2005/06	10	27,846	507	28,352	172
	2006/07	12	41,040	1,377	42,417	257
Weyerhaeuser PP FMA	2004/05	2	453	3,760	4,213	26
	2005/06	3	1,104	1,198	2,302	14
	2006/07	4	1,179	1,927	3,106	19
Mee-Toos Area TSL	2004/05	0	0	0	0	0
	2005/06	1	3,621	42	3,663	22
	2006/07	1	1,1613	343	11,956	72
Island Forests	2004/05	1	1,855	0	1,855	11
	2005/06	1	18,033	0	18,033	109
	2006/07	1	426	0	426	3

Data Source: Ministry of Environment, Forest Service

Volume of Round Wood Exports (m3)

Tenure Type	Companies	2001/2002	2002/2003	2003/2004	2004/2005	2005/2006	2006/2007
FMA Companies	L&M	0	73	0	0	24	0
	Mistik	0	0	0	0	0	11,741
	MLOSB	0	0	0	0	0	0
	Weyer PA	0	0	0	5,792	0	20,889[1]
	Weyer PP	0	0	0	0	0	3,606[1]
Area TSL	Kitsaki-Zelenski	0	0	0	0	0	0
	Mee-Toos	0	0	0	0	0	24,300
	NWC	0	0	0	0	0	0
Volume TSL	G Ungar Construction	0	0	0	24,104	51,436	14,730
	Dallen Industries	0	0	0	0	0	11,956
FPP	Mee-Toos	14,270	30,187	8,722	36,809	12,658	2,128
	Aalican Wood Preservers	1,368	0	0	0	0	0
Provincial Total	**All**	**15,638**	**30,260**	**8,722**	**66,705**	**64,118**	**89,350**

*does not include permits for landscape trees and Christmas trees
**includes timber harvested volumes from provincial parks, which are not designated Provincial Forests

Timber Processing Related Statistics

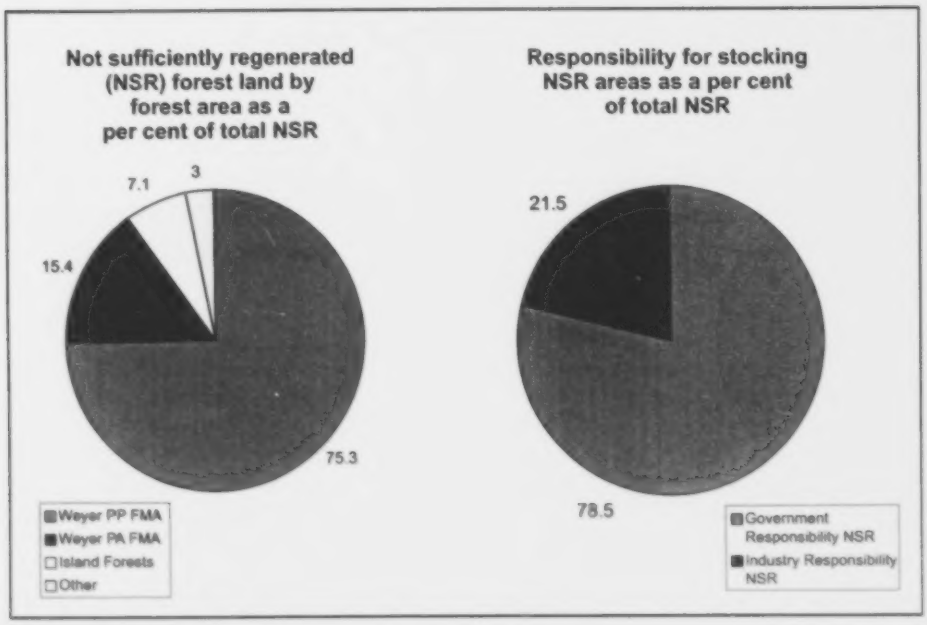
Number of Licences Issued for Crown Timber Processing Facilities by Year								
Facility Type	1999-2000	2000-2001	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007
Pulpwood	2	2	2	2	2	2	2	1
Post/peeler treatment	8	3	7	7	8	7	6	5
OSB	1	1	2	1	1	2	2	2
Sawmill	113	76	82	70	79	86	70	59
Portable Sawmill	3	2	0	1	2	0	0	0
Log Builder	1	0	0	1	1	2	2	2
Dowel	0	0	0	0	0	1	1	1
Head Rig Mill	0	0	0	0	0	0	1	0
Shingle	1	0	0	0	0	0	0	0
Plywood	1	1	1	1	1	1	1	1
Chipper	0	0	0	1	0	0	1	1
Fuel wood	0	0	3	1	2	0	0	0
Total	**130**	**85**	**97**	**85**	**96**	**101**	**86**	**72**

Data Source: Ministry of Environment, Forest Service

Silviculture Statistics

Provincial Regeneration Status (as of October 19, 2006)							
Provincial Forest Area	Harvest Period	Harvest Area (Ha)	Sufficiently Regenerated Area (SR) (ha) *	NSR (ha)	Percent of Total NSR	Government Responsibility for NSR %	Industry Responsibility for NSR %
Weyer PP FMA[1]	Pre-2001	272,853	187,620	85,233	74.5	94.5	5.5
Weyer PA FMA[1]	1987-2000	91,516	73,850	17,666	15.4	0	100
Mistik[1]	1984-2000	75,000	72,750	2,250	2	0	100
L&M[1]	1987-2000	4,745	4,745	0	0	0	0
Mee-Toos[2]	Pre-2001	4,000	3,600	400	0.3	100	0
Kitsaki-Zelensky[2]	Pre-2001	3,000	2,700	300	0.3	100	0
NWC[2]	Pre-2001	3,000	2,700	300	0.3	100	0
Turnor[2]	Pre-2001	1,000	900	100	0.1	100	0
Island Forests[3]	Pre-2001	28,325	20,172	8,153	7.1	100	0
Total		**483,439**	**369,037**	**114,402**	**100%**	**78.5%**	**21.5%**

1 Source: includes regeneration survey information and estimates
2 Source: estimates only
3 Source: regeneration survey information
* Sufficiently Regenerated status is based on 80% stocking (800 trees per ha) and minimum height of 30 cm
Note: Most of the NSR in the province pre-dates the establishment of FMAs and, therefore, is a government responsibility. Most NSR forest lands are still functioning boreal forest ecosystems, containing significant numbers of trees and a wide range of wildlife habitat. However, low stocking levels in these areas have significantly diminished commercial timber value, and for this reason are designated as NSR



Renewal Program Activities – Renewal of Backlog NSR Lands

	Island Forests			
Year	# Trees Planted	Site Preparation ha	Area Planted ha	Stand Tending ha
	750,000	200	271	0
2000/2001	981,080	632	406	0
2001/2002	1,721,390	763.3	742	250
2002/2003	2,099,148	185	1,002	0
2003/2004	1,508,776	696.6	642	300
2004/2005	1,662,480	615	862	576.4
2005/2006	1,106,820	0	658.2	0
2006/2007	0	0	0	0
2007/2008	0	0	0	0

	Mee-Toos TSL Area			
Year	# Trees Planted	Site Preparation ha	Area Plan ha	Stand Tending ha
1999/2000	0	0	0	0
2000/2001	0	78.5	0	0
2001/2002	700,000	120	507	0
2002/2003	0	235	0	0
2003/2004	0	110	0	0
2004/2005	0	0	0	0
2005/2006	2,000	0	0	0
2006/2007	0	0	0	0
2007/2008	0	0	0	0

	Weyerhaeuser Pasquia Porcupine FMA			
Year	# Trees Planted	Site Preparation ha	Area Plan ha	Stand Tending ha
1999/2000	2,284,690	3,957.7	1,753.3	0
2000/2001	3,079,608	4,871.5	2699	1,080
2001/2002	2,027,036	2,465.7	1,840.4	540
2002/2003	2,487,580	1,497.8	2,145	1,830.3
2003/2004	1,247,840	1,694.6	859.9	2,547
2004/2005	1,813,192	1,587.6	1,471	2,189.3
2005/2006	1,520,908	2,246.3	1,212.9	1,455
2006/2007	2,125,124	2,176.2	1,655.1	1,266
2007/2008	1,928,128	2,297.2	1,576.6	2,042.4

Data Source: Ministry of Environment, Forest Service

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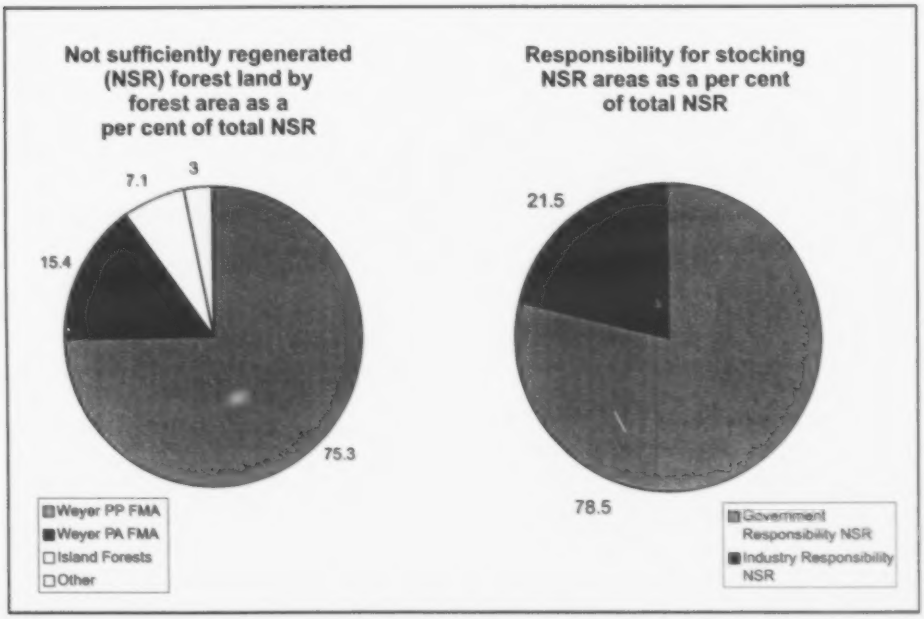

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2004/2005	1,662,480	615	862	576.4
2005/2006	1,106,820	0	658.2	0
2006/2007	0	0	0	0
2007/2008	0	0	0	0

	Mee-Toos TSL Area			
Year	# Trees Planted	Site Preparation ha	Area Plan ha	Stand Tending ha
1999/2000	0	0	0	0
2000/2001	0	78.5	0	0
2001/2002	700,000	120	507	0
2002/2003	0	235	0	0
2003/2004	0	110	0	0
2004/2005	0	0	0	0
2005/2006	2,000	0	0	0
2006/2007	0	0	0	0
2007/2008	0	0	0	0

	Weyerhaeuser Pasquia Porcupine FMA			
Year	# Trees Planted	Site Preparation ha	Area Plan ha	Stand Tending ha
1999/2000	2,284,690	3,957.7	1,753.3	0
2000/2001	3,079,608	4,871.5	2699	1,080
2001/2002	2,027,036	2,465.7	1,840.4	540
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2007/2008	1,928,128	2,297.2	1,576.6	2,042.4

Data Source: Ministry of Environment, Forest Service

Provincial Forest Natural Disturbance Statistics

Net Area of Moderately to Severely Defoliated Forest Areas and Treated Areas for Spruce Budworm (does not exclude parks and reserves)									
	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/2008
Infested (defoliated) Area (ha)	506,749	265,776	438,883	669,591	511,780	282,376	183,511	99,692	89,613
Btk Treated Area (ha)	20,639	30,260	26,350	42,503	40,277	27,227	30,000	26,337	0

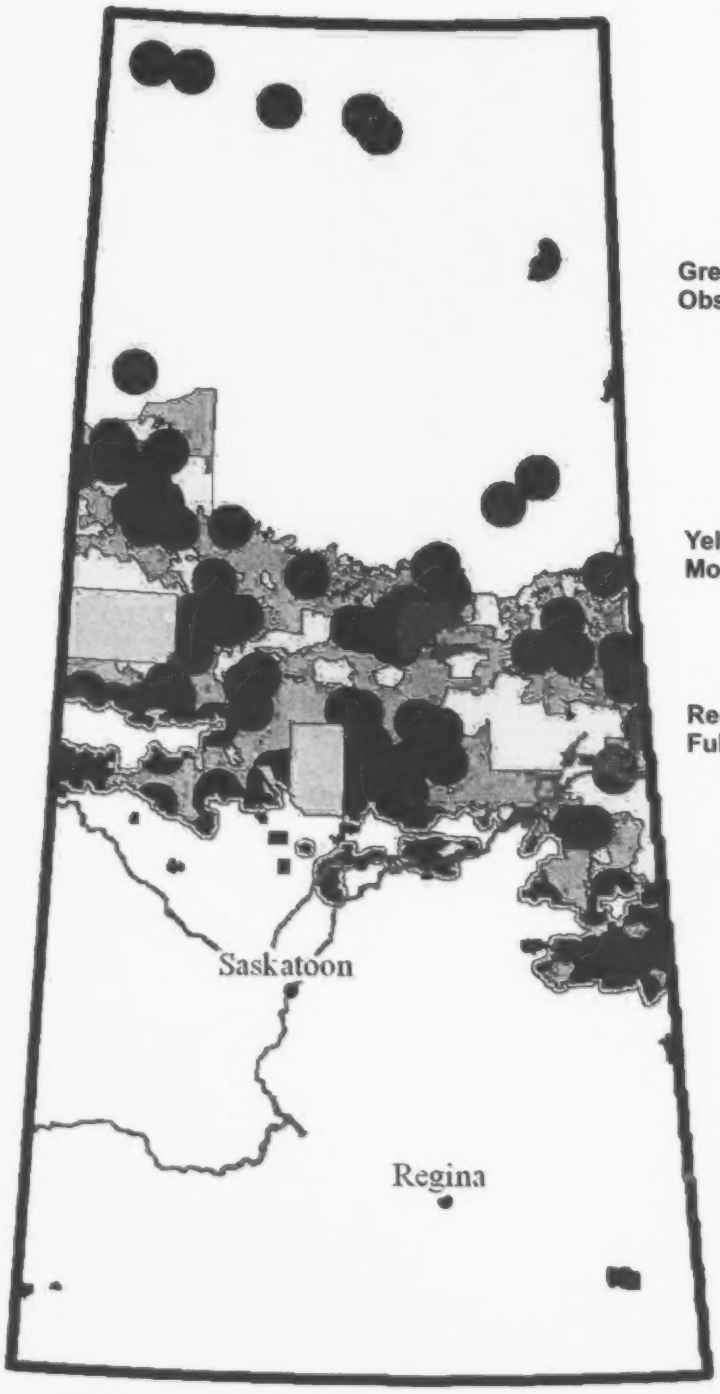
Fire Disturbance: Number of Fires										
Year	1999	2000	2001	2002	2003	2004	2005	2006	2007	10 Year Average
Full Response Zone	628	302	717	755	557	185	202	341	278	499
Modified and Observation Response Zone	107	117	140	125	85	144	121	160	92	133
Total Number of Fires	735	419	857	880	642	329	323	501	370	

Fire Causes (Human vs. Lightning)									
Year	1999	2000	2001	2002	2003	2004	2005	2006	2007
Human Caused	240	239	540	440	286	164	127	168	235
Lightning Caused	495	180	317	440	354	165	196	333	135

Fire Disturbance: Area Burned										
	1999	2000	2001	2002	2003	2004	2005	2006	2007	10 Year Average
Full Response Zone	67,441	5,245	32,098	698,501	77,821	847	28,327	134,087	1,204	144,356
Modified and Observation Response Zone	106,278	135,564	151,331	181,108	48,768	257,284	185,446	1,069,641	211,709	291,012
Total Area Burned	173,719	140,809	183,429	879,609	126,589	258,131	213,773	1,203,728	212,913	

Data Source: Ministry of Environment, Fire Management and Forest Protection Branch

Provincial Fire Management Strategies



Green:
Observation Zone

Yellow:
Modified Response Zone

Red and Orange:
Full Response Zone

Grazing and Hay Production in the Provincial Forest

	1999/2000	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005
# Grazing Licences	143	133	134	141	120	119
# of Livestock Head	7,299	6,687	6,720	6,654	6,110	6,541
# Haying Permits	67	43	68	104	92	59
Tonnes of Hay Cut	4,007	2,516	4,297	5,538	4,951	3,617

Forest Area	2005/2006 # Grazing Licences	2005/2006 # of Livestock Head	2006/2007 # Grazing Licences	2006/2007 # of Livestock Head
Mistik FMA	15	837	9	344
L&M FMA	3	183	4	301
Meadow Lake OSB Lands	19	1,795	18	1,802
North West Communities TSL	0	0	0	0
Kitsaki-Zelensky TSL	0	0	0	0
Turner East Supply Area	0	0	0	0
Turner West Supply Area	0	0	0	0
Weyerhaeuser PA FMA	16	827	15	763
Island Forests	45	1,803	44	1,646
Mee-Toos TSL	0	0	0	0
Weyerhaeuser PP FMA	12	718	11	711
Suggi Lowlands Prov. Forest	0	0	0	0
Nemeiben Northern Prov. Forest	0	0	0	0
Northern Provincial Forest	0	0	0	0
Total	**109**	**6,155**	**101**	**5,567**

Forest Area	2005/2006 # of Haying Permits	2005/2006 # of Tonnes of Hay Cut	2006/2007 # of Haying Permits	2006/2007 # of Tonnes of Hay Cut
Mistik FMA	5	610	5	1,060
L&M FMA	1	100	1	100
Meadow Lake OSB Lands	3	132	5	197
North West Communities TSL	0	0	0	0
Kitsaki-Zelensky TSL	0	0	0	0
Turner East Supply Area	0	0	0	0
Turner West Supply Area	0	0	0	0
Weyerhaeuser PA FMA	7	298	9	868
Island Forests	14	339	12	220
Mee-Toos TSL	0	0	0	0
Weyerhaeuser PP FMA	5	260	6	262
Suggi Lowlands Prov. Forest	0	0	0	0
Nemeiben Northern Prov. Forest	0	0	0	0
Northern Provincial Forest	0	0	0	0
Total	**35**	**1,739**	**38**	**2,707**

Data Source: Forest Service, Timber Information System

Provincial Government Forest Management Activities

Forest Revenues/Ministry of Environment Expenditures - Forest Service Branch, Fire Management and Forest Protection Branch (In Thousands of Dollars)								
Revenues	1999/2000	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	2005/2006	2006/2007
Crown Dues (FMAs only)	9,096	6,083	6,578	6,924	8,424	16,062[1]	8,852	4,626
Forest Management Fees	784	1,117	162	318	201	410	80	108
Term Supply Licenses and Permits Dues & Fees	537	332	238	392	410	487	474	376
Penalties & Interest	51	10	35	60	45	467	52	17
Total Revenues	10,468	7,542	7,013	7,694	9,080	17,426[1]	9,458	5,127
Expenditures	1999/2000	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	2005/2006	2006/2007
Forest Service Branch								
General Admin	1,371	1,367	1,687	1,645	1,945	2,598	1,928	1,791
Inventory	1,416	1,738	2,265	2,257	2,467	3,406	3,010	2,691
Operations*	756	1,195	1,368	1,044	1,176	2,302	1,768	1,706
Forest Practices	-	-	-	-	-	483	979	943
Silviculture	3,653	5,974	5,899	4,883	4,838	3,091	4,295	3,839
Insect & Disease	2,113	2,544	2,624	2,189	2,257	1,747	1,900	1,906
Forest Management & Forest Protection Branch								
Operational Programs	68,600	34,300	48,145	111,990	70,692	32,396	37,400	63,820
***Total Expenditures**	77,909	47,118	61,988	124,008	83,375	46,023	51,280	76,790

* Numbers do not include Compliance and Field Services Branch forestry inspections and enforcement expenditures, which occurred up to 2006/2007

1 The total Crown dues are higher in 2004/2005 than other years, because of high market prices for oriented strand board and lumber in that year; FMA Crown dues are market dependent.

Data Source: Ministry of Environment, Finance and Administration

Forestry Standards Development Statistics

Approved Components of the Forest Resources Management Act Manuals Being Developed	
Manuals	**Finalized Standards**
Forest Planning Manual	Saskatchewan Forest Vegetation Inventory Standard, July 2004 Forest Management Planning, August 2007 Dwarf Mistletoe Management, 2007
Forest Operations Manual	Regeneration Assessment Standard, March 2004
Scaling Manual	In progress
Compliance Manual	Saskatchewan Forest Vegetation Inventory, Audit Protocol, 2007

Data Source: Ministry of Environment, Forest Service

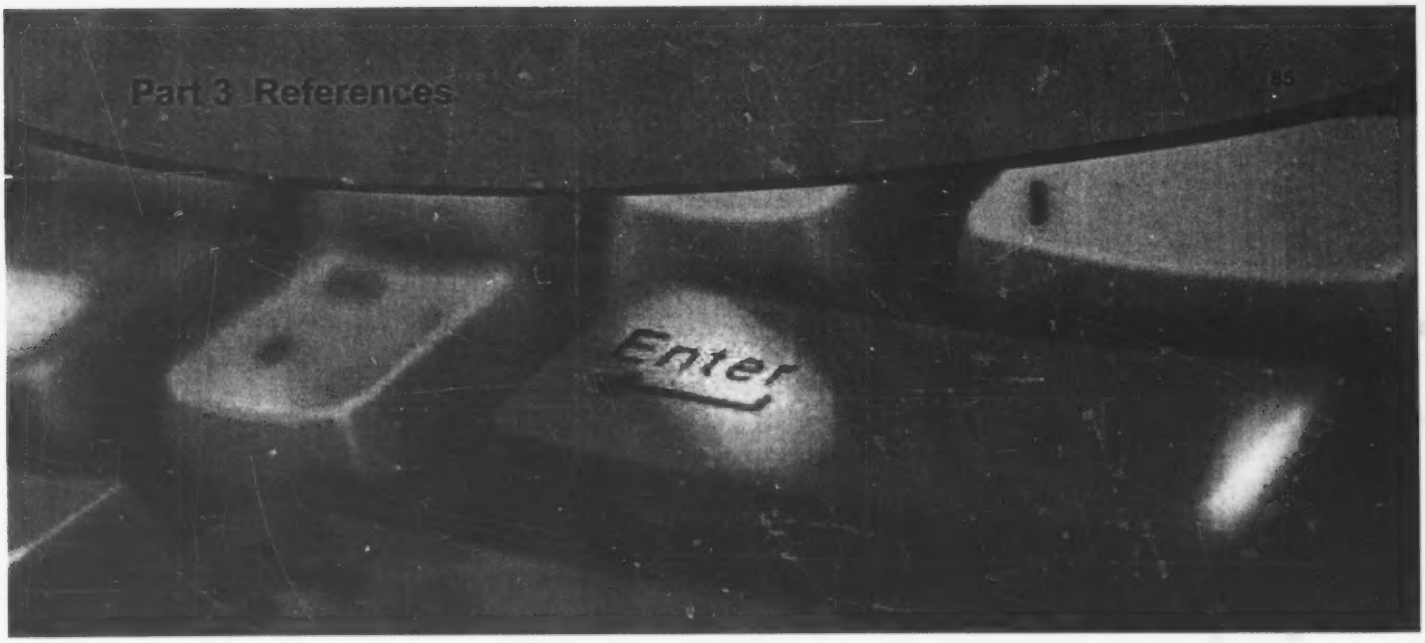
Provincial Forests Area Breakdown

Crown Provincial Forests	Gross Area (ha)
Commercial Forest	
Weyerhaeuser Prince Albert FMA	3,315,231.00
Weyerhaeuser Pasquia Porcupine FMA	1,998,086.00
Mistik FMA	1,926,367.00
L&M FMA	72,576.00
Meadow Lake OSB Area Based TSL	238,540.00
Island Forests	
Nisbet Provincial Forest	83,479.00
Fort a La Corne P.F.	132,951.00
Torch River P. F.	4,371.00
Canwood P.F.	5,077.00
Total Island Forests	225,878.00
Mee-Toos Area Based TSL	1,672,211.00
Kitsaki-Zelensky Area Based TSL	595,553.00
North West Communities Area Based TSL	778,263.00
Turner East Supply Area	606,350.00
Turner West Supply Area	492,234.00
Suggi Lowlands Northern Provincial Forest	566,811.00
Nemeiben Northern Provincial Forest	218,144.00
Total Commercial Forest	**12,706,244.00**
Total Commercial Forest as per cent of total Provincial Forest	**37%**
Non-Commercial Northern Provincial Forest	**21,196,445.00**
Non-Commercial Northern Provincial Forest as per cent of Provincial Forest	**63%**
Total Provincial Forests (Commercial + Non-Commercial)	**33,902,689.00**
Total Provincial Forests as a per cent of the Province	**52%**
Provincial Parks (adjacent to Provincial Forest)	983,472.00
Total Crown Provincial Forests Land + Provincial Parks of the North	**34,886,161.00**
Total Area of the Province	**65,220,083.00**
Per cent of the Provincial Forests Gross Area that is water and clear muskeg	**13%**
Per cent of the Provincial Forests Gross Area that is an exclusion to the Provincial Forests*	**5%**

*Land exclusions include: Indian reserves, private land, Crown reserve lands, municipal land, recreation sites etc.
Data Source: Ministry of Environment, Geomatics Services Branch

Large and Medium Timber Processing Mills in the Province

Mill Type	Ownership	Location	Production Capacity	Products
OSB	Weyerhaeuser	Hudson Bay	575,000 thousand sq ft 7/16 basis	Oriented strand board panels and web stock Capability to produce products



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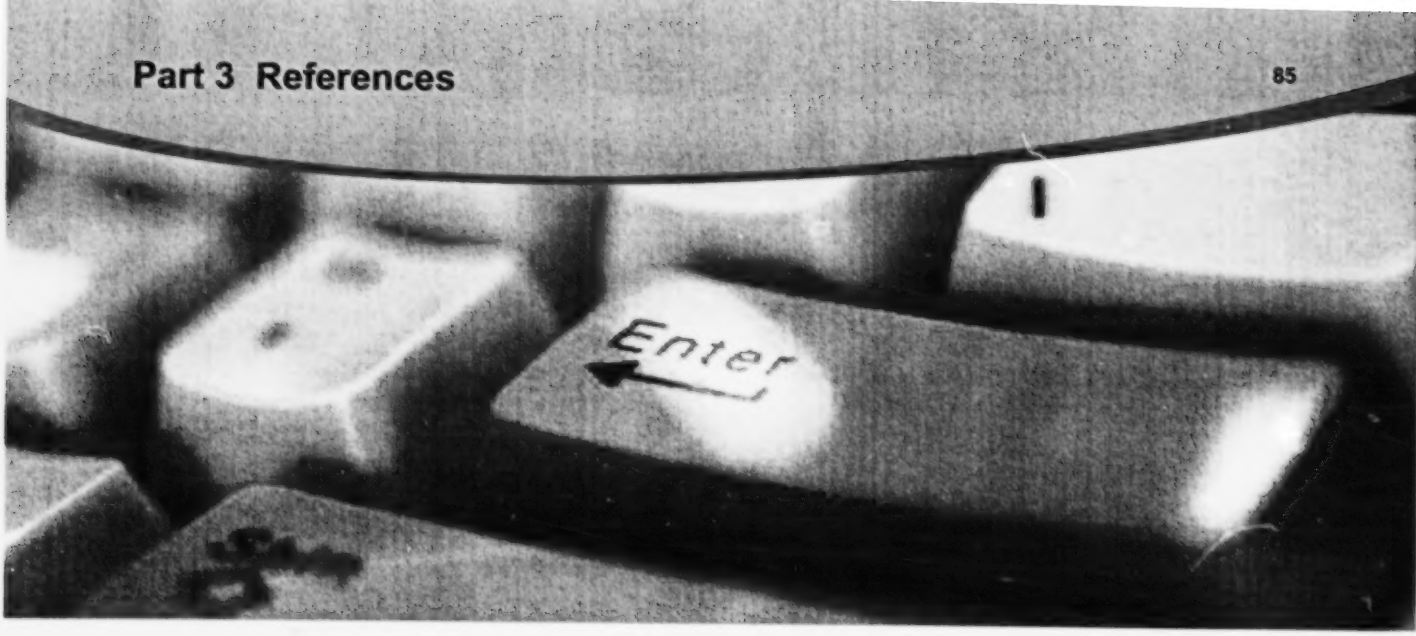

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Acronyms

AUM	Animal Unit Month
CCFM	Canadian Council of Forest Ministers
FBM	Foot Board Measure
FMEMP	Forest Management Effects Monitoring Program
FMA	Forest Management Agreement
FPP	Forest Products Permit
FMP	Forest Management Plan
FS	Forest Service
GDP	Gross Domestic Product
ISO	International Organization of Standardization
NA	Not Available
NSR	Not Sufficiently Regenerated
OSB	Oriented Strand Board
PA	Prince Albert
PP	Pasquia-Porcupine
TSL	Term Supply Licence
SFM	Sustainable Forest Management
SFVI	Saskatchewan Forest Vegetation Inventory

Glossary

Aboriginal	Aboriginal Peoples include Indian, Inuit and Métis People of Canada (as defined in the Constitution Act – section 35, 1982) (SE Forest Planning Manual, 2005)
Backlog NSR (Not Sufficiently Regenerated) Land	NSR is defined as area not meeting the regeneration standards. Ministry Backlog NSR land is defined as NSR area resulting from harvesting activity before 1995/96 in the Pasquia Porcupine FMA and before 2002/03 in the Island Forests
Criterion	A category of conditions or processes by which, sustainable forest management may be assessed. A criterion is characterized by a set of indicators that are measured or assessed periodically to assess change. (SE Forest Planning Manual, 2005)
Crown Resource Land	Means all lands administered by the department other than parkland within the meaning of The Parks Act but does not include any Crown mineral or Crown mineral lands within the meaning of The Crown Minerals Act. (SE Forest Planning Manual, 2005)
Ecosystem	An interrelating and dynamic system of animals, plants, soil, water and air connected by functional relationships and flows of matter and energy. (SE Forest Planning Manual, 2005)
First Nation	Although the term First Nation is widely used, no legal definition of it exists. Among its uses, the term "First Nations People" refer to the Indian people in Canada, both Status and Non-Status. Some Indian people also use the term First Nation to replace the word "band" in the name of their community. (Indian and Northern Affairs Canada, website)
Forest Management Effects Monitoring Program	The Provincial Forest Management Effects Monitoring Program is designed to monitor the response of forest ecosystems to both natural and man-caused disturbances. It is a long-term program of Forest Service Branch, which will compare the responses of the forest ecosystems to these two forms of disturbances. Differences in the responses will be assessed and the results used to adapt forest management practices to better emulate the effects of natural disturbances
Forest Management Agreement (FMA)	An agreement entered into by the minister pursuant to The Forest Resources Management Act, where the term of the agreement is not exceed 20 years, with provisions setting out the rights of the licensee for the harvesting of forest products and the responsibilities of the licensee for the renewal of specified forest products. (The Forest Resources Management Act, 1999)

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Forest Products Permit (FPP)	A permit granted by the minister pursuant to The Forest Resources Management Act conferring the right to harvest specified forest products for a year or less. (The Forest Resources Management Act, 1999)
Forest Service	The Forest Service is the branch within the Ministry of Environment that is responsible for the administration and management of forest resources on Crown lands in Saskatchewan. (SE Forest Planning Manual, 2005)
Forest Value(s)	A characteristic, component, or quality considered by an interested party to be important in the forest. (SE Forest Planning Manual, 2005)
Free to Grow (FTG)	A state or condition assigned to a sample unit (i.e. a tree, a group of trees, or a harvested area) as a result of its assessment against a set of regeneration standards that provide a reasonable assurance that the future forest conditions defined by the standards will be achieved. (SE Forest Planning Manual, 2005)
Indicator	An indicator is a variable that represents the state or condition of a specific objective and element and for which one or more targets are set. It is a quantitative or qualitative variable, which can be measured or described and which when observed periodically demonstrates trends. (SE Forest Planning Manual, 2005)
Old Growth	A forest ecosystem or stand dominated by old trees that have originated naturally and in which the genetic, species and structural diversities have not been significantly changed by human activity. (SE Forest Planning Manual, 2005)
Provincial Forest	Any Crown resource land designated by the minister pursuant to section 12 of The Forest Resources Management Act. (SE Forest Planning Manual, 2005)
Silviculture	The theory and practice of controlling the establishment, composition, growth, and quality of forest stands to achieve the objectives of management (Canadian Forest Service, 1995)
Sustainable Forest Management (SFM)	Management to maintain and enhance the long-term health of forest ecosystems, while providing ecological, economic, social, and cultural opportunities for the benefit of present and future generations. (SE Forest Planning Manual, 2005)
Term Supply Licence (TSL)	A licence granted by the minister pursuant to The Forest Resources Management Act conferring the right to harvest specified forest products for a set number of years. (The Forest Resources Management Act, 1999)

Your Comments

Your comments on this report are important, to help us improve the content and presentation of future reports. Please send your feedback to:

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e-mail: spiros.papastergiou@gov.sk.ca
Phone: 306-953-2221 Fax: 306-953-2360

Content
Do you consider the indicators presented in the Part I of this report to be relevant to sustainable forest management in Saskatchewan?
Which of the indicators are you most interested in?
Are there some indicators that you feel should be added?
Presentation
Do you consider the report's format user-friendly?
Do you consider the report's quality of production adequate?
Use of the Report
Will you recommend the report to friends and or colleagues?
Do you intend to use the report information for any purpose beyond of informing yourself?
Would you like to see other information included? (If yes, provide an example)
Overall
What would be the most significant improvement we could make to the report?

Part 4 Your Comments

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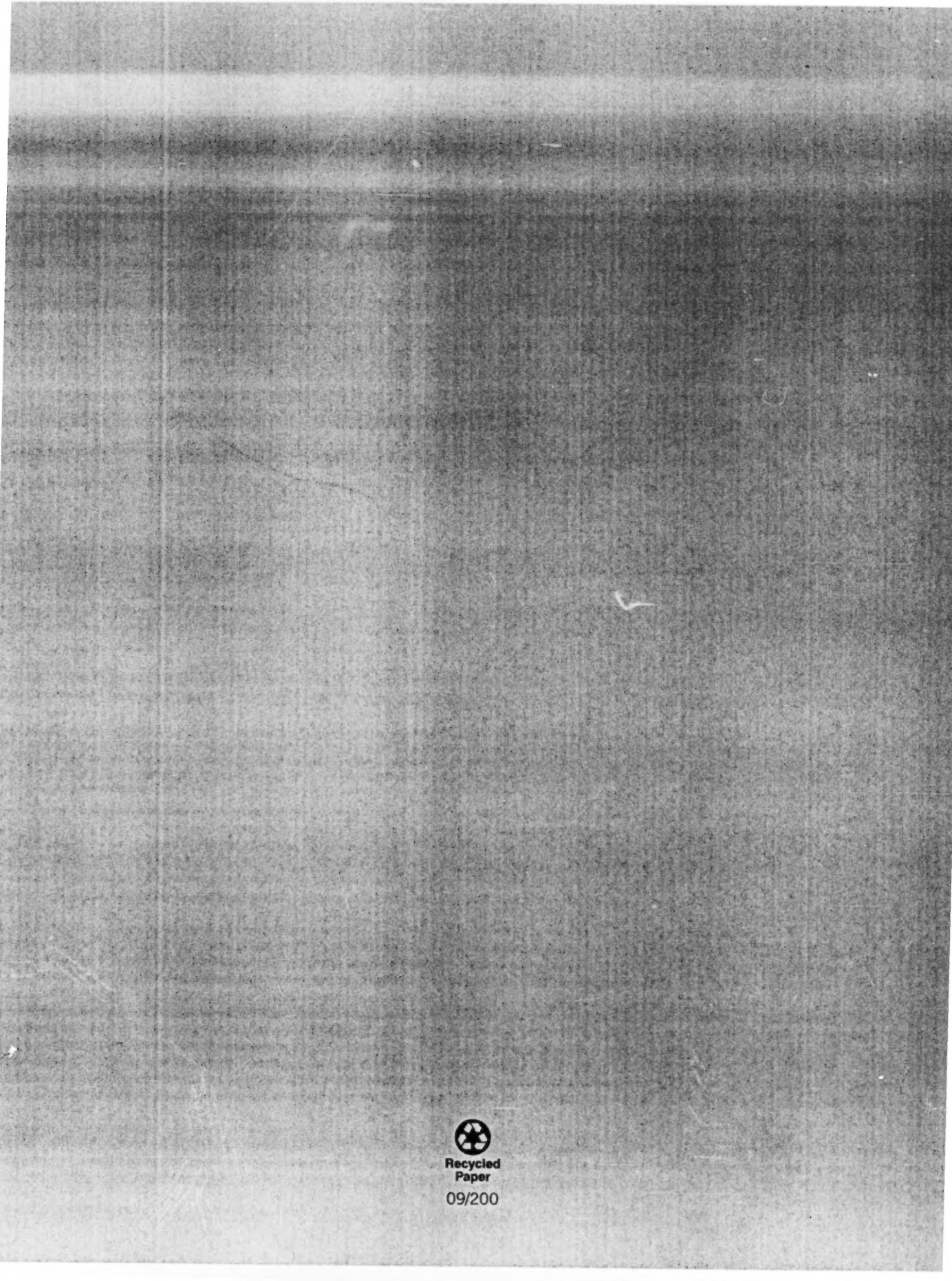

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